

# EXHIBIT 23

Licensing Executives Society  
(U.S.A. and Canada), Inc.



# Global “Life Sciences” Royalty Rates & Deal Terms Survey - 2016 -

***LES USA/Canada***

-In coordination with -

***Licensing Executives Society  
International (LESI)***

February 2017

# Table of Contents

Introductory Letter	3
LES Survey Committee	4
Introduction	6
Report Highlights	7
Methodology	9
 Analysis and Results	
Profile of Responses	13
Royalty Analysis	39
Flat Royalties	45
Tiered Royalties	60
Flat vs. Tiered Royalties	74
Profile of Diagnostic Deals	76
Valuation	85
Analysis of Therapeutic Areas	141
Analysis of Drug Delivery Deals	166
Analysis of Veterinary Deals	177
Miscellaneous Analyses	186
 Appendix A – Aggregate Survey Results by Question (Combined)	207
Appendix B – Aggregate Survey Results by Question (LES USA & Canada)	231
Appendix C – Aggregate Survey Results by Question (LESI Ex. USA & Canada)	255
Appendix D – Survey Instrument	279

# Introduction

## *Royalty Rates and Deal Terms Survey*

The LES (USA & Canada) Life Sciences Sector, in coordination with the Licensing Executive Society International (LESI) Life Sciences Sector, is pleased to present the "[LES Global Life Sciences](#)" [Royalty Rates and Deal Terms Survey - 2016](#)". This landmark report is one of the many benefits of LES membership and reflects the organization's objective to provide its members with relevant, cutting edge, licensing education and industry information generally not available from other sources.

We believe you will find this report contains many keen insights on some of the most important areas of deal making in our industry.

**We would like to specifically acknowledge and express our appreciation to each LES survey contributor.** Because of the confidential manner in which the survey is executed, LES does not know who participated. **However, we applaud their efforts and willingness to share their deal-related information. It is because of these members that we have this survey report to issue. Thank you, and your companies, for your participation.**

The Survey Committee was assisted in this effort by Vault Consulting, a survey research firm in the Washington, DC area. Vault is specialized in confidential studies for industry and professional associations. The Vault survey instruments and data processes ensure the confidentiality of all company and deal information reported. Individual company and individual deal data is NEVER reported in any individual manner, only in aggregate analyses as part of a larger sample. We appreciate their fine work in assisting with the survey and this report.

Finally, we want to acknowledge the contributions of the Survey Committee Members (listed on the following page). It was their aggregate efforts that made the survey a reality for the professional benefit of our LES (USA & Canada) and LESI Life Sciences Sector members. If you have any questions or suggestions on the survey, please contact any of us at [info@les.org](mailto:info@les.org).

Jim McCarthy, CLP, Chair 2015  
Life Sciences Sector  
LES USA / Canada

Ben Bonifant, Chair, 2016  
Life Sciences Sect  
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Karthika, Perumal, Chair, 2017  
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Gary Keller ,Chair  
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# Introduction

## Core Committee & Key Contributors \*\*

- Jim McCarthy, CLP, *CorpDev Ventures*, (co-chairperson) \*\*
- Rob McInnes, *Dibbs Baker (Australia)* (co-chairperson) \*\*
- Dana Matzen, *IntelGenX*, (Canada) (co-chairperson) \*\*

### Survey Instrument Sub-Committee

- Paul Tabor, *University of Colorado, Denver*
- Haskell Adler, *Moffitt Cancer*
- Beth Gildea, *GE Healthcare*

### Promotion / Recruitment Sub-Committee

- Jim McCarthy, *CLP, CorpDev Ventures*
- Rob McInnes, *Dibbs Michael Barker, Australia*
- Jennifer Dyer, *USC Stevens Center for Innovation*
- Michael Fluhler, *Fishman Steward PLLC*
- Jonathan Mitchell, *TreMonti Consulting*
- Jianbo Hu, *PhD, Oregon State University*
- Stacey Nunes, *National Research Council Canada*
- Linda Hogan, *CoLucid Pharmaceutical*
- Gary Keller, *Xomic, Chair, LESI Life Sciences Sector*

# Introduction

## Core Committee & Key Contributors \*\*

### Analysis Sub-Committee

- Sean Sheridan, *Charles River Associates, Int'l* \*\*
- Julie Kim, *Triangle Insights Group* \*\*
- Art Misyan, *Merck Sharpe & Dome*

### Special Advisors: Analysis

- Ben Bonifant, *Triangle Insights Group* \*\*
- Jeff Snell, *Charles River Associates* \*\*

### Vault Consulting

- Ian Santo Domingo, *Managing Director*
- Rachel Dobis, *Director* \*\*



# Introduction

## *By LES Members → For LES Members*

The Licensing Executives Society (U.S.A. and Canada), Inc. (LES) and the Licensing Executive Society International (LESI) are professional societies representing over 10,000 members engaged in the transfer, use, development, manufacture and marketing of intellectual property. With the growing economic importance of licensing and partnerships, LES members are at the leading edge of business, technical and legal aspects of deal making.

This report summarizes the results of a targeted survey to LES Life Sciences Sector members in Life Sciences industries ( i.e. biotechnology, pharmaceuticals, diagnostics, and drug delivery) in an attempt to benchmark important areas of deal-making for Life Sciences licensing professionals.

In particular, this report illustrates detailed analysis on fixed royalties, tiered royalties, deal terms, valuation methods, and therapeutic areas. It provides a more current perspective on licensing royalty rates and deal terms than the Freedom of Information (FOI) approach allows, and provides information not routinely found in other licensing royalty rate sources or publications. Actual survey results are summarized in aggregate form, presented in Appendix A.

This survey is the 5<sup>th</sup> edition of the LES Life Sciences Royalty Rates and Deal Terms Survey, and has been executed on a global scale.

We trust that this report is a useful tool for our LES Life Sciences members and colleagues who are interested in the dynamic and expanding field of licensing partnerships and intellectual asset management.

All responses to this survey have been kept strictly confidential. At no point will anyone, other than select Vault Consulting, Inc. (Vault) employees, be granted access to respondents' submissions, and then only for data management and quality control.

We welcome your feedback! If you have any questions or comments on this report, please send them to [info@les.org](mailto:info@les.org)

# Report Highlights

## Profile and Composition of Responses

- 165 total responses were submitted. Of these responses, 117 surveys were considered complete for analysis and incorporated into this report.
- Survey respondents represented 8 of the 33 Licensing Executives Society International (LESI) Societies.
- Respondents based on number of Deals used in the analysis: 44% Operating Companies, 27% academics , 8% Not-for-Profit Organizations, 7% Government, and 14% Other. Of the Operating Companies, 22% were Pharmaceutical and 12% were Biotech.
- Respondent by Organization Composition: 19% Pharmaceutical Companies (includes Diagnostic and Drug Delivery), 12% Biotech Companies (includes Device), 22% Academic Institutions, 11% Government , and 36% Other.

## Deal Statistics

- 18% of the submitted deals were completed in 2014 , 37% were completed in 2015, and 45% were completed in 2016 through August.
- 71% of reported deals were reported by the licensors.
- 51% of deals were related to Injectable products, and 24% small molecules .
- Anticancer (Oncology), CNS, and Infectious Disease were the most prevalent therapeutic area types submitted.



# Report Highlights

## Deal Statistics (continued)

- 70% of all deals submitted were still in the Preclinical stage of development (Discovery , IND Track/ Pre-IND, IND Filed, and Pre-IDE).
- 84% of deals were categorized as exclusive.
- 87% of deals included the U.S. and almost 80% of deals were considered “Global” in scope.
- Peak Annual Sales: 61% of deals x> \$US100 million, or 39% deals **less** than \$US 100million

## Fixed and Tiered Royalties

- Of the 1117 deals, 73 deals were of the fixed/flat royalty type, 34 were tiered royalty type, and 10 did not have any royalty components.
- In the majority of deals royalties are paid on Net Sales (89%) followed by Gross Sales (10%) and Units (1%) .
- The median fixed royalty rate for the earliest stage products was approximately 4%, increasing to 12.5 % post Proof of Concept (POC).

## Valuation

- While “upfront payment” was the most frequent financial component (61%), “sales milestones” displayed the greatest average and median \$\$ amounts.
- rNPV (31%) and NPV (29%) were the primary valuation methods followed by comparables at 22%.
- While NPV (62%) and Comparables (62%) are the most frequent valuation methods used, Effective Royalty Rates (EFR) (22%) is emerging as a common methodology.

# Methodology for 2016 Life Sciences Deal Terms and Royalty Rate Survey

# Methodology

## 2016 Survey

In early 2016, Vault staff coordinated with a select committee, of experienced LES (USA/Canada) and LESI Life Sciences Sector members, to develop and enhance a survey instrument that would help provide current and relevant data on royalty rate and deal terms for licensing professionals. The survey was designed to focus on the LES Life Sciences Sector; specifically, the global segments of biotechnology, pharmaceuticals, platform technologies, diagnostics and drug delivery.

After multiple planning meetings by the LES Survey Committee and Vault, Vault tested the survey instrument. Learnings from the pilot survey exercise were incorporated to construct and refine the final online survey instrument.

Vault worked with the committee to create a survey plan that emphasized Confidentiality and included:

- Survey promotions;
- An online, web-based survey instrument, and
- Execution of survey reminder communications to LES members.

The LES Survey Committee provided Vault with a list of 5,093 LES Life Sciences member email addresses. Led by the LES (USA/Canada), this represented LES member, with Life Sciences Sector interest, from over 32 member societies within the Licensing Executive Society International (LESI). Vault emailed each member a unique survey account. During the LES (USA & Canada) spring meeting in April 2016, LES officially promoted the survey to all appropriate LES members. All members were sent updates of the progress and reminders throughout the survey collection phase to encourage participation.

The survey ended in the fall of 2016 with respondents from 67 organizations providing complete information on 117 deals. Quality control and data analysis was conducted in the fall of 2016. During the October 2016 LES USA/Canada Annual Meeting in Vancouver, the Survey Committee presented the preliminary findings. Based on questions and feedback, additional analysis was conducted. A final survey report was issued to LES USA / Canada and LESI members in early 2017.

# Methodology

## Timelines for Recent Surveys

***This has been the fifth recent survey of deal terms and royalty rates conducted by LES/LESI.***

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
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2008 Survey

Apr 2007: Initial Committee Recruited

**Jan-Feb 2008: Data Collection**

Jun 2008: Electronic Report Issued

Oct 2008: Report Presentation (Orlando)

Jun 2009: Les Nouvelles Article

2009 Survey

**Oct-Dec 2009: Data Collection**

May 2010: Initial Presentation (Boston)

Sept 2010: Report Presentation (Chicago)

Sept 2011: Les Nouvelles Article

2012 Survey

**Jun-Aug 2012: Data Collection**

Oct 2012: Report Presentation (Toronto)

2014 Survey

**Mar-June 2014: Data Collection**

Oct 2014: Preliminary Results (San Francisco)

2016 Survey

**Aug-Oct 2016: Data Collection**

Oct 2016: Preliminary Results (Vancouver)

Feb 2017: Report Presentation

# Methodology

## Survey Progression

*Very minor changes were made in the research materials for the 2016 survey.*

### Survey Changes (2008-2009)

- Expanded **global** participation
- Refined information on **drivers of royalty payments**
- Refined **information on asset** being licensed
- Refined questions on **approach to valuation**

### Survey Changes (2009-2012)

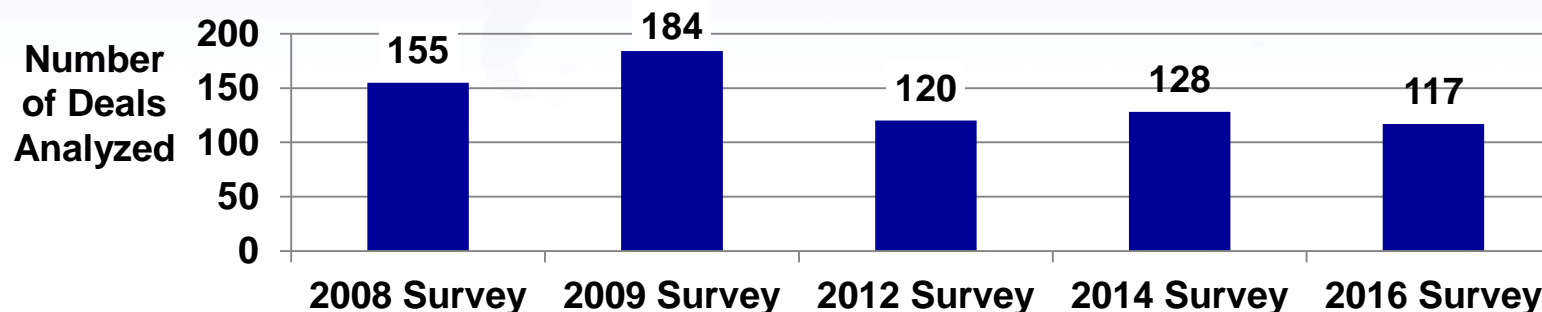
- Separated “**Not Applicable**” and “**Don’t Know**” for several questions
- Refined “**Injectable**” to allow “Subcutaneous/Intramuscular” and “Intravenous”
- Added “Medical Research Institute” for organization type
- Added “**Multiples**” and “**Internal Rate of Return**” for approaches to Valuation

### Survey Changes (2012-2014)

- Added “**Drug Use Deal**” as an option for the Deal Reason
- Clarified that the **revenue reported** should be for the **business unit** conducting the deal
- Provided additional clarification on reporting of **diagnostic stage of development**

### Survey Changes (2014-2016)

- Added “**Effective Royalty Rate**” as an option for the method of financial modeling
- Collected information on the number of licenses executed in the past 12 months



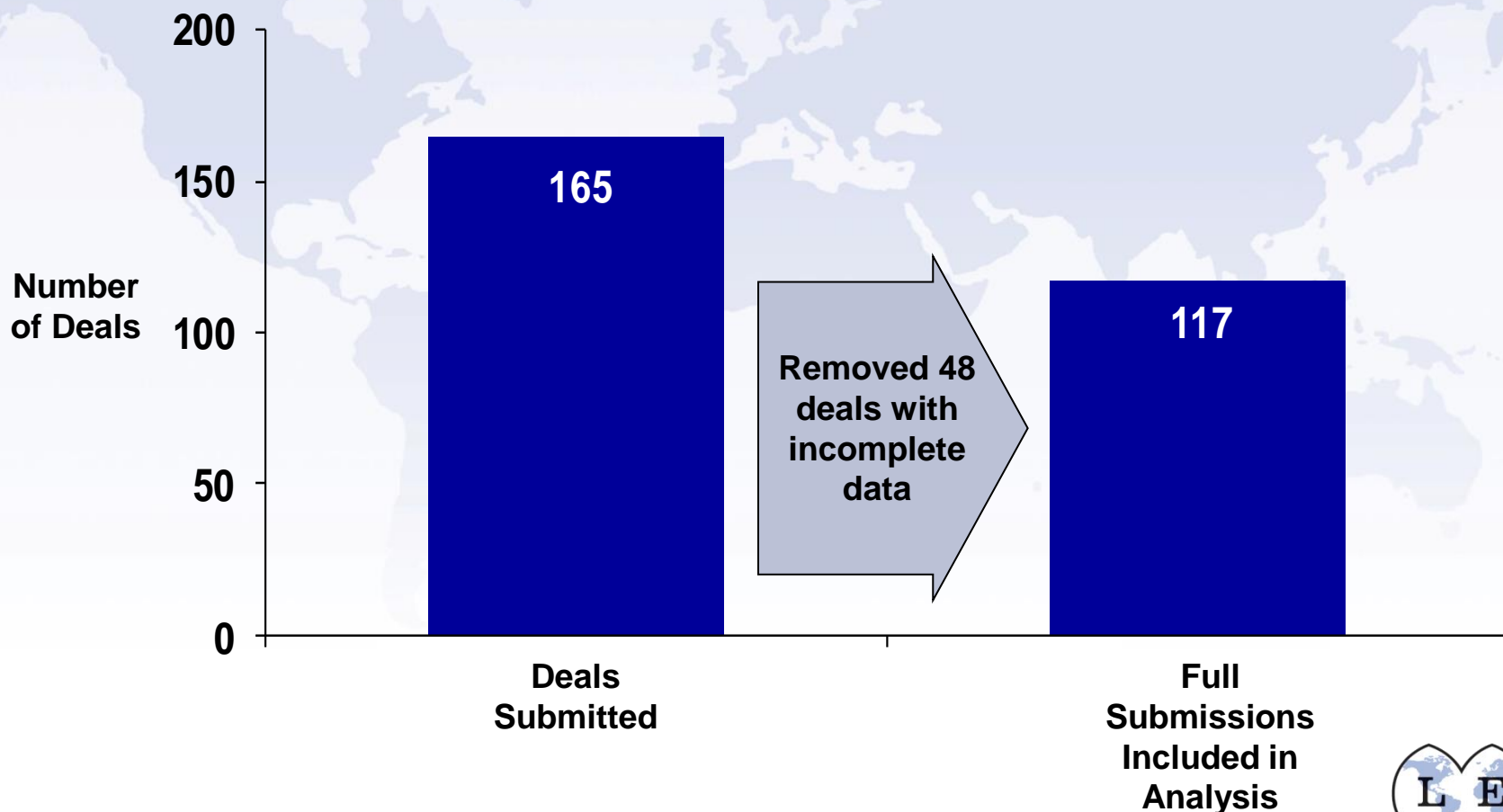
# A Profile of Responses



# A Profile of Responses – 2016 Survey

## *Deals: Number of Responses*

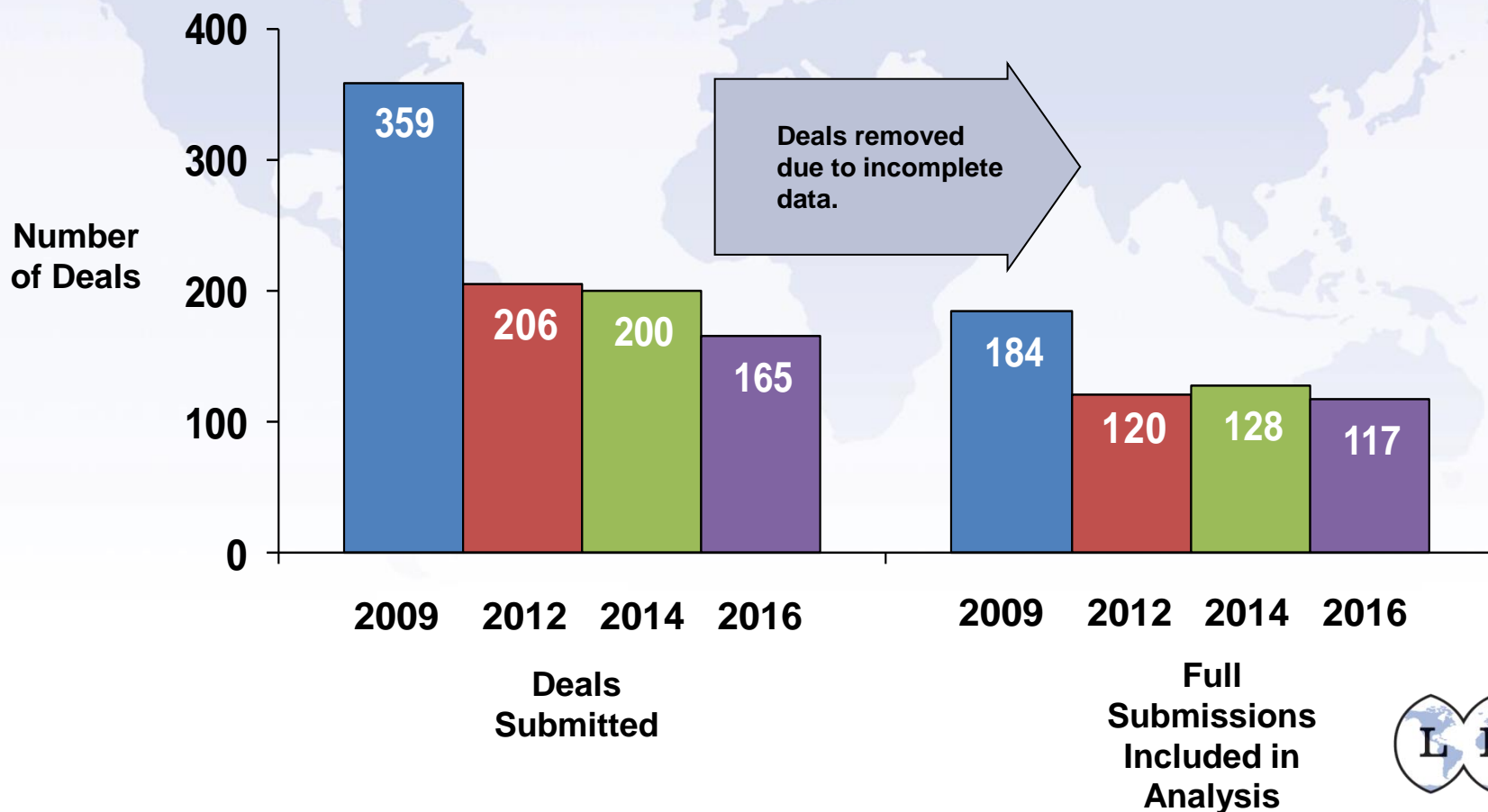
***165 deals were submitted, 117 were complete and included in Analysis.***



# A Profile of Responses – Past Surveys

## Information for Combined Surveys

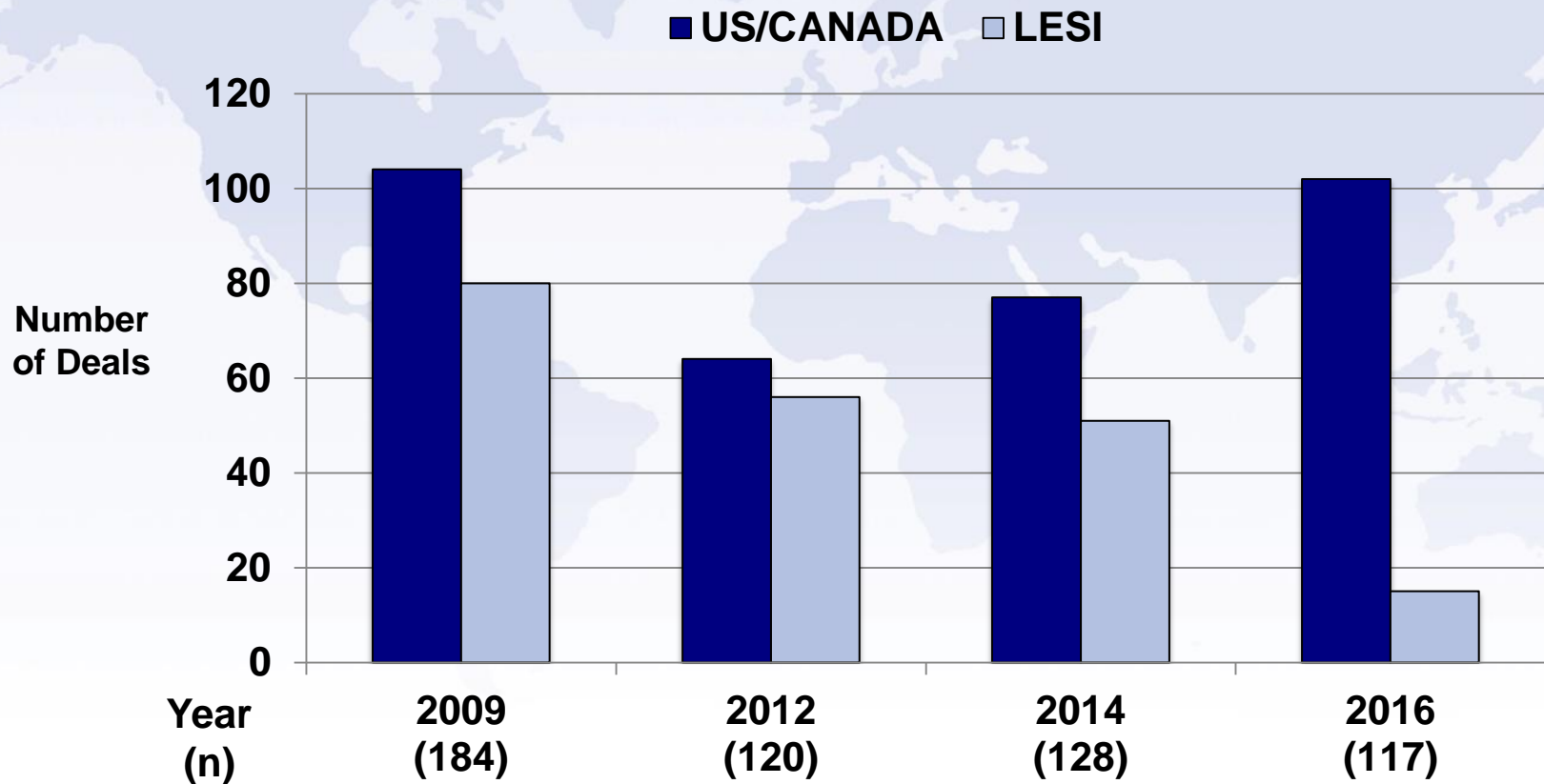
*In some analysis, results from the prior surveys are included.*



# A Profile of Responses – Past Surveys

## *Participation US/CANADA and LESI*

*LESI participation was significantly lower than in prior years.*



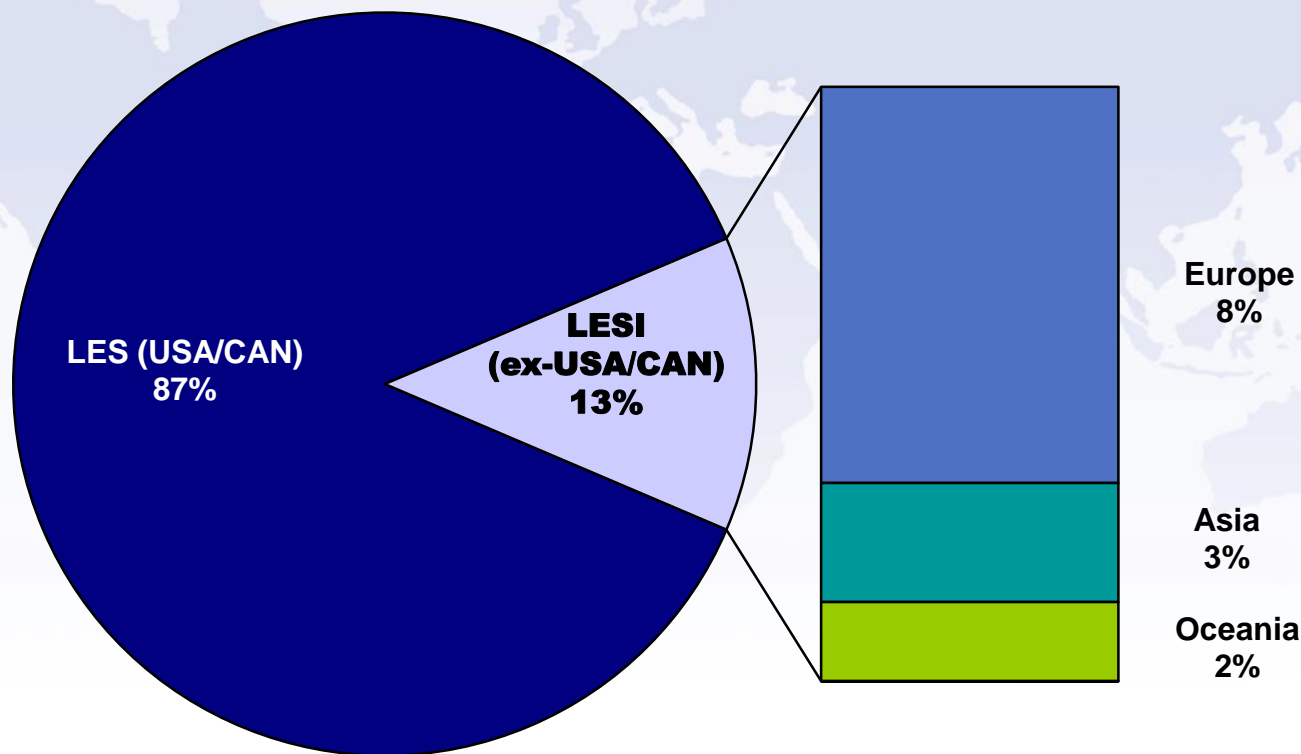
Full Submissions Included in Analysis



# A Profile of Responses – 2016 Survey

## *Location of Respondents*

*A large majority of deals came from LES (USA/CAN) members.*



(n = 117 deals)

Determined by respondents listed country of origin



# A Profile of Responses – 2016 Survey

## *Broad Global Participation*

***7 of the 31 LESI (ex-USA/CAN) Societies reported at least one deal.***

<b><u>LES Society</u></b>	<b><u>Deal Count</u></b>
Australia & New Zealand	2
Austria	1
France	2
Germany	3
India	1
Japan	2
Switzerland	4
USA/Canada	102

(n = 117 deals)

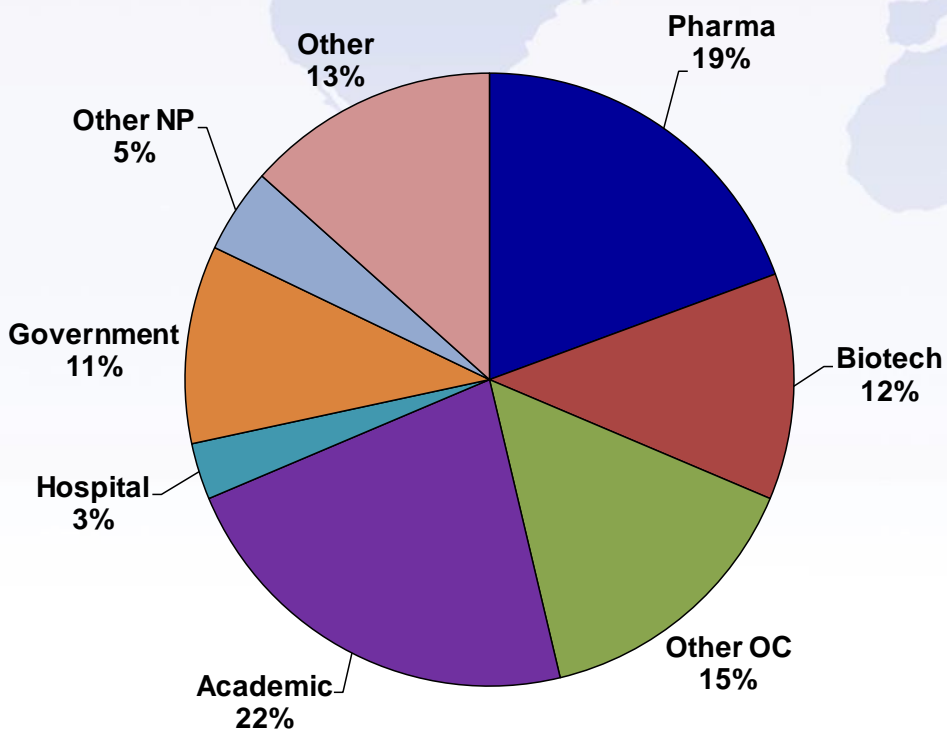


# A Profile of Responses – 2016 Survey

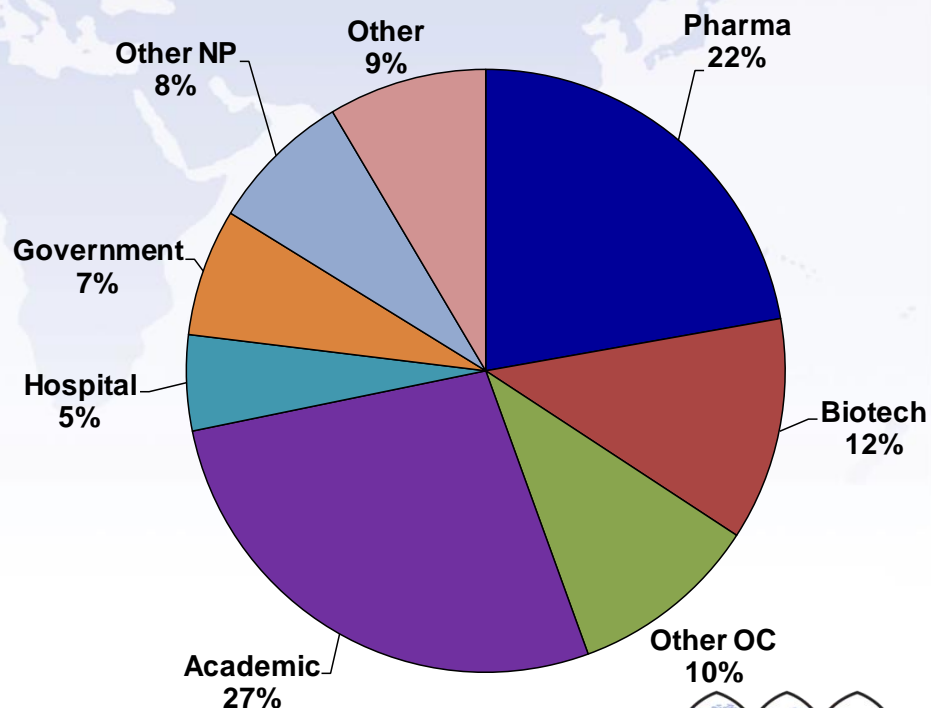
## Organization Type

*Responses were received from a broad range of contributors.*

By Number of Respondents  
(n = 67)



By Number of Deals Submitted  
(n = 117)



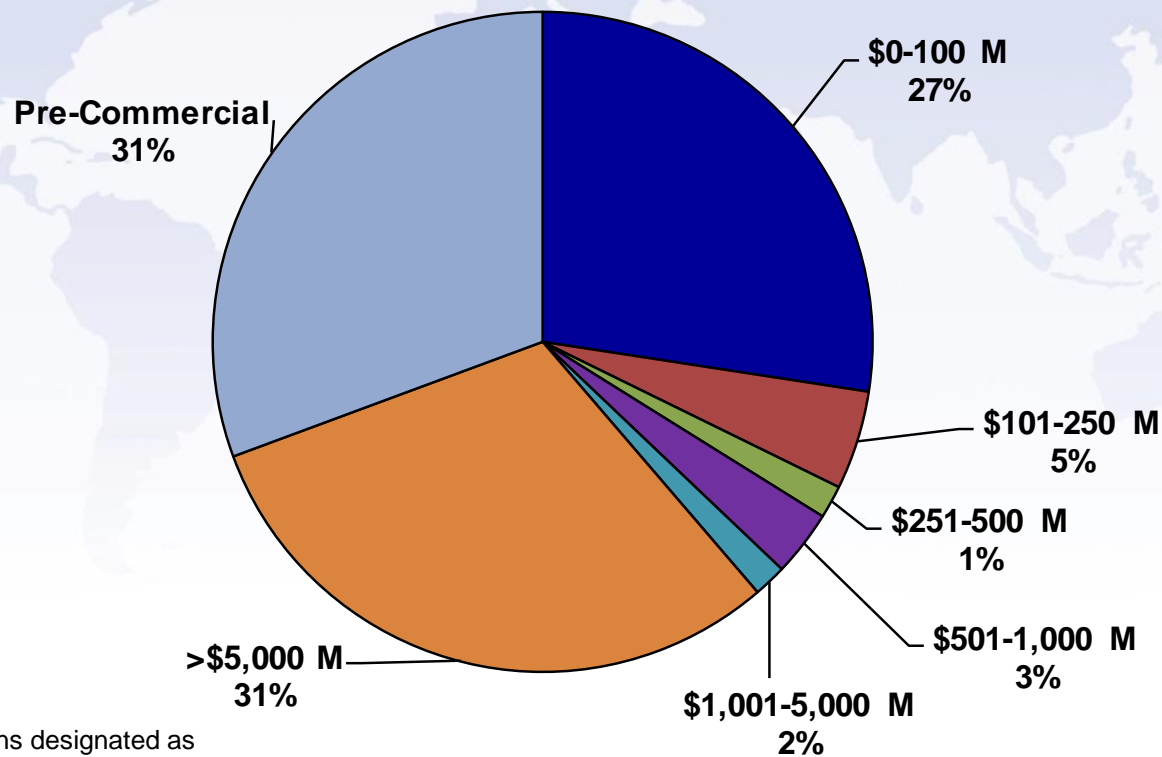


# A Profile of Responses – 2016 Survey

## Size of Organizations – Sales\*

*Within the operating respondents, company size ranged greatly from small to large.*

Responses Included in Analysis  
(n = 62 deals\*)



\*- Includes 10 deals from organizations designated as Other

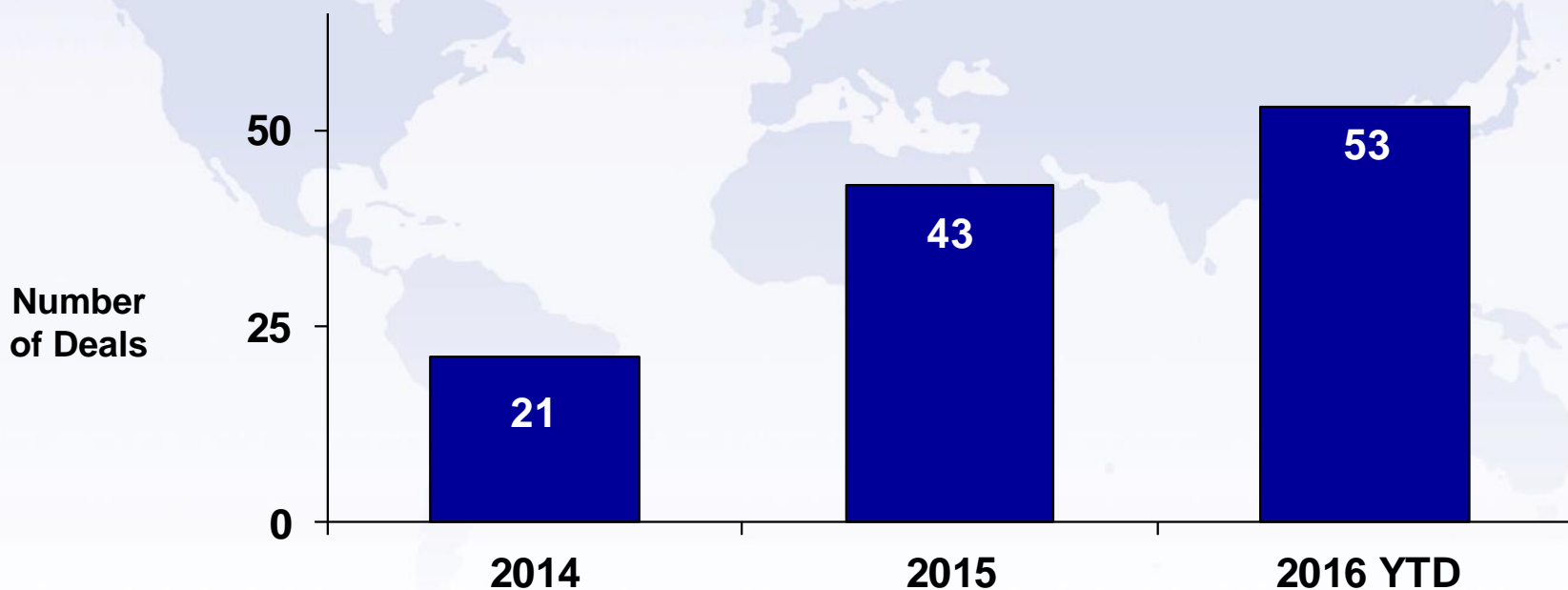
Profile Question C). What was your organization's annual pharmaceutical sales dollars in 2015?



# A Profile of Responses – 2016 Survey

## *Year of Deal*

*Data indicate a propensity to report more recent deals.*



(n = 117 deals)

Year Deal Was Completed

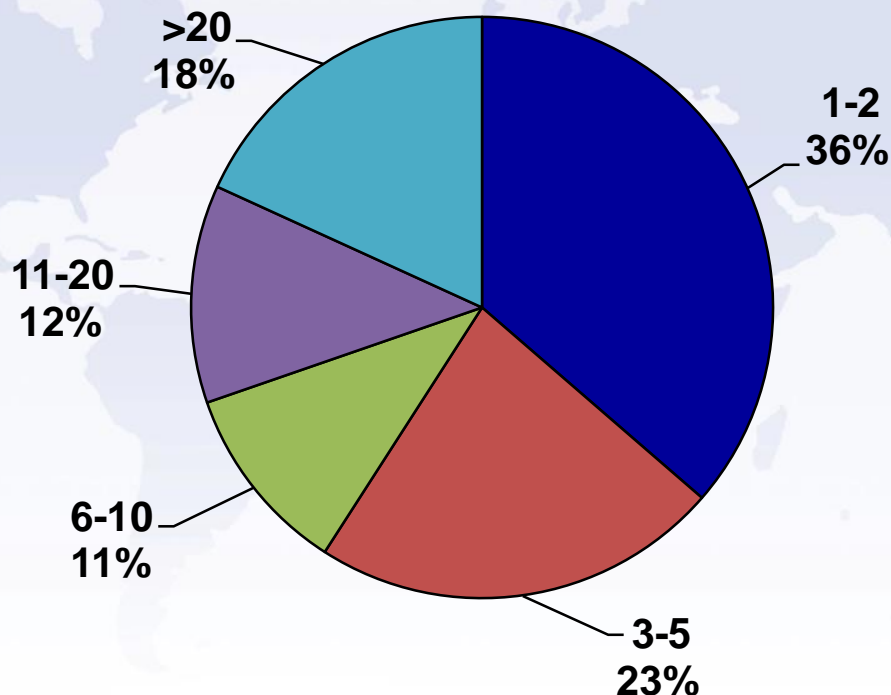


Q1. What year did deal take place?

# A Profile of Responses – 2016 Survey

## *Number of Deals Executed*

*A majority of respondents have executed at least 3 deals in the past year.*



(n = 66 respondents)

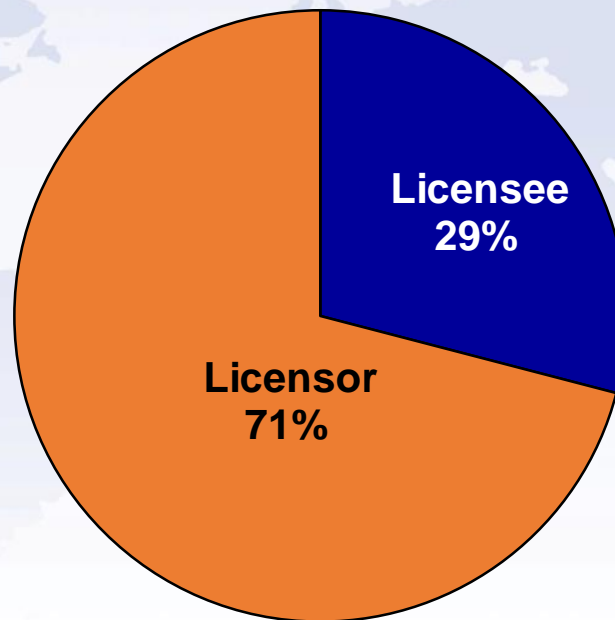


QB: In the past 12 months, how many licenses were executed by your company/organization?

# A Profile of Responses – 2016 Survey

## *Role in Deal*

***A greater number of deals were reported by licensors than licensees – this is similar to previous surveys.***



(n = 117 deals)



Q2: Were you the Licensor or Licensee?

# A Profile of Responses – 2016 Survey

## Partnering Organization

*In over 50% of deals the partner was a pharma or biotech company.*

		Partner Organization					
		Pharma/ Delivery	Biotech	Academic	Gov't	Other/Not Reported	Total
Licensor Reporting Company	Pharma/Delivery	3	1	0	0	0	4
	Biotechnology	4	6	0	0	1	11
	Academic	6	12	0	0	12	30
	Government	3	2	1	0	1	7
	Other	1	7	0	0	23	31
	Total	17	28	1	0	37	83

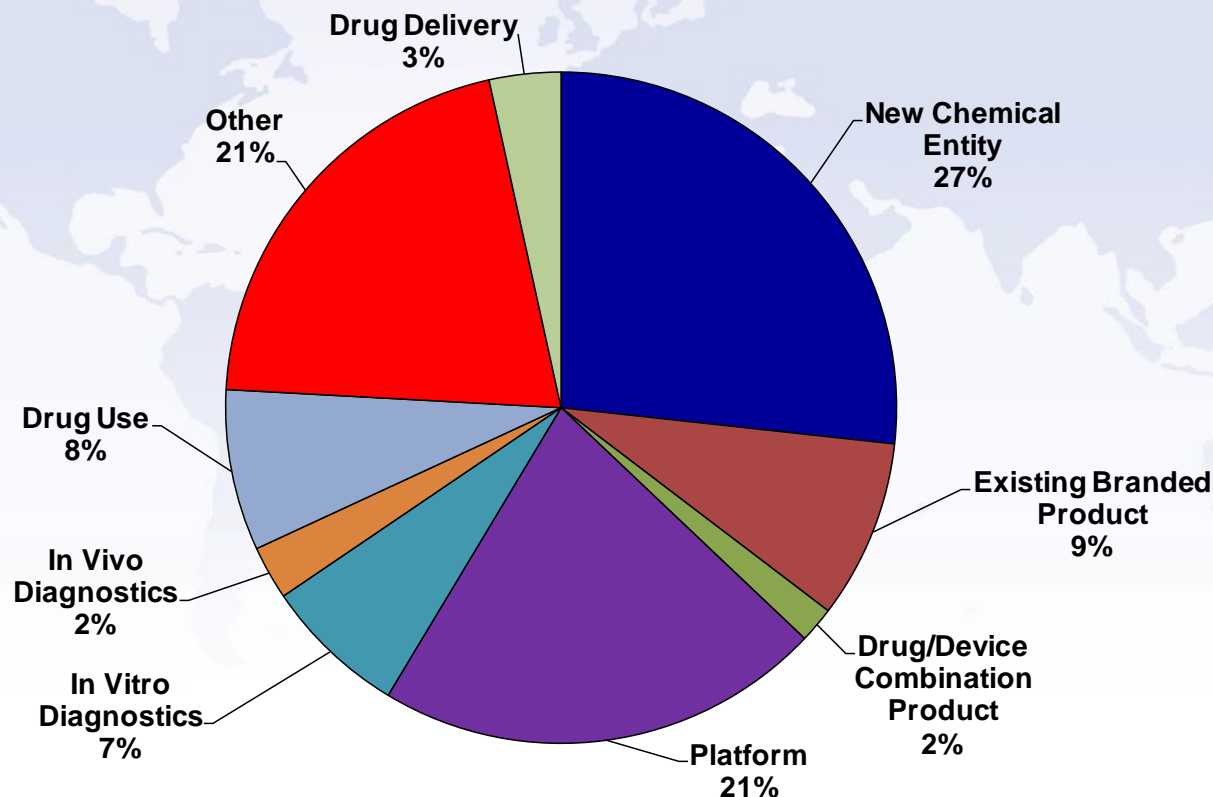
		Partner Organization					
		Pharma/ Delivery	Biotech	Academic	Gov't	Other/Not Reported	Total
Licensee Reporting Company	Pharma/Delivery	7	13	0	1	2	23
	Biotechnology	0	1	0	1	1	3
	Academic	0	0	1	0	1	2
	Government	0	0	1	0	0	1
	Other	0	2	1	0	2	5
	Total	7	16	3	2	6	34



# A Profile of Responses – 2016 Survey

## Deal Reason

*Deals included in the survey covered a wide variety of asset types.*



(n = 116 deals)

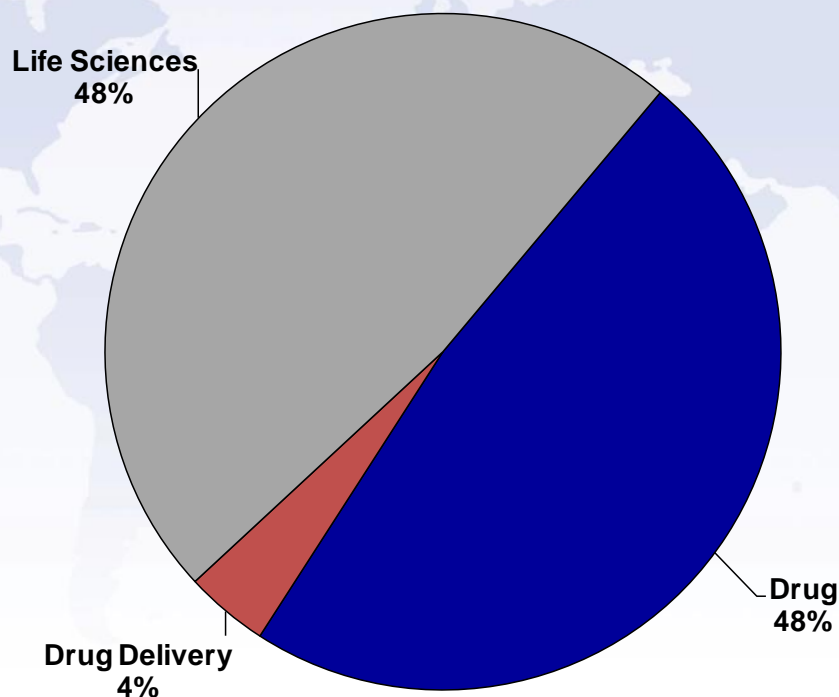




# A Profile of Responses – 2016 Survey

## Platform Deals

***Most platform deals are either Life Sciences or Drug.***



(n = 25 deals)

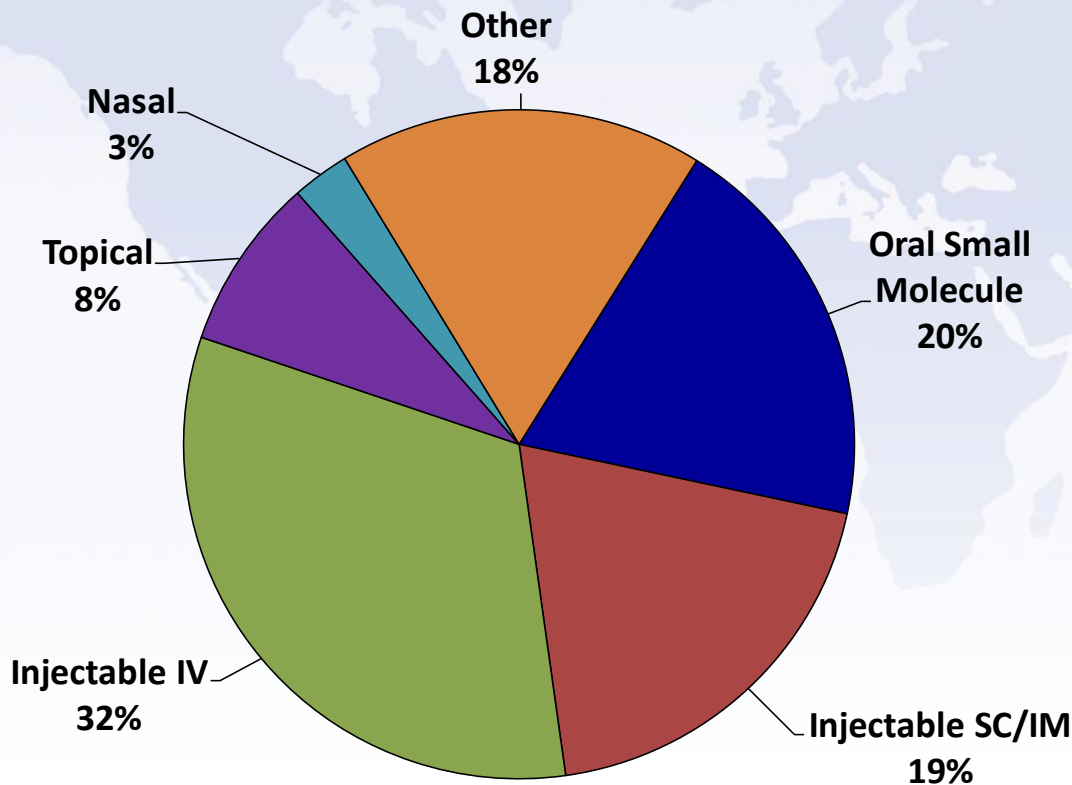


Q4: The MAJOR reason for this deal was?

# A Profile of Responses – 2016 Survey

## *Expected Route of Administration\**

*There was a notably high share of deals that related to injectable products.*



- **Injectables were used across therapeutic areas with the highest in oncology.**
- **Since the sample did not have any dermatology deals, the highest share of topical products were for infectious disease, oncology, and ophthalmology.**

(n = 108 deals)

Q5. What is the expected route of administration/delivery method in the license?

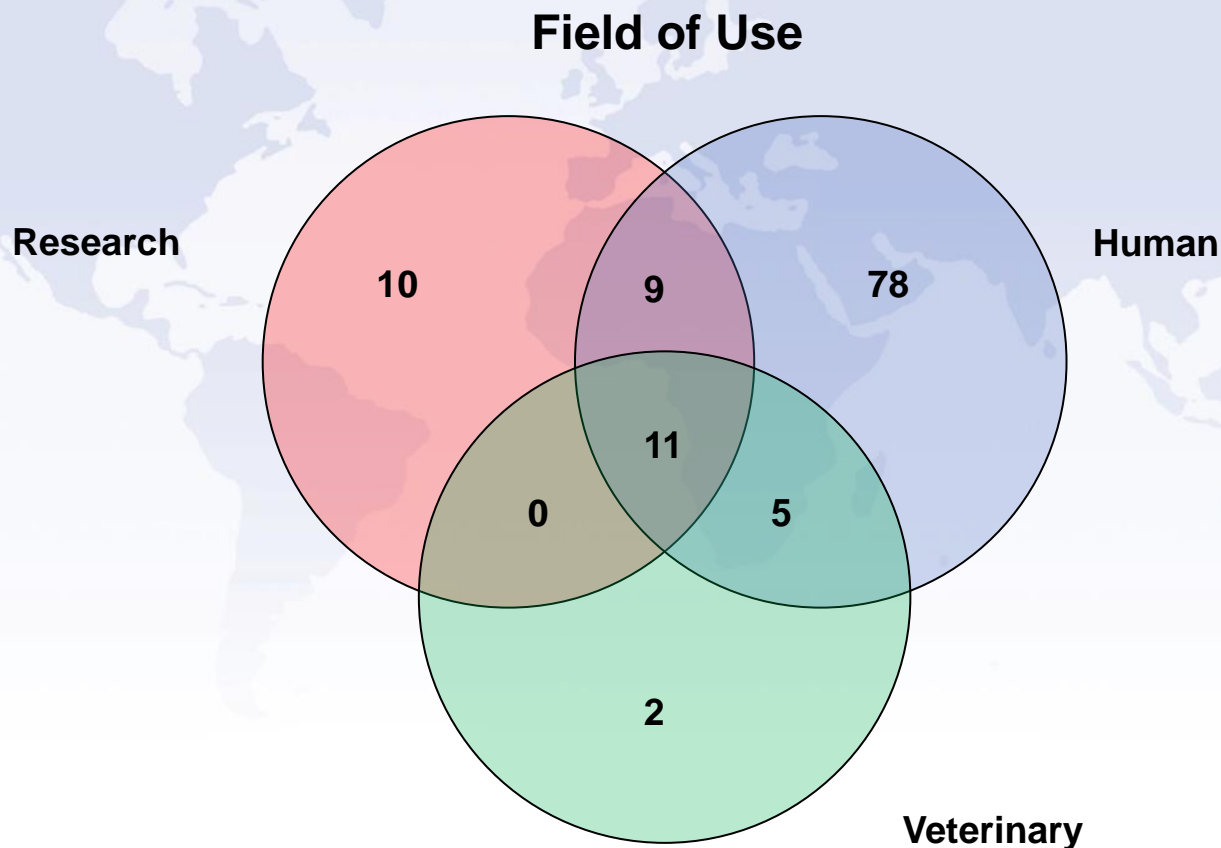
\*- excludes IVD and certain Other deals



# A Profile of Responses – 2016 Survey

## *Field of Use*

*As in previous years, over 80% of the deals anticipated human use of the asset.*



(n = 115 deals)

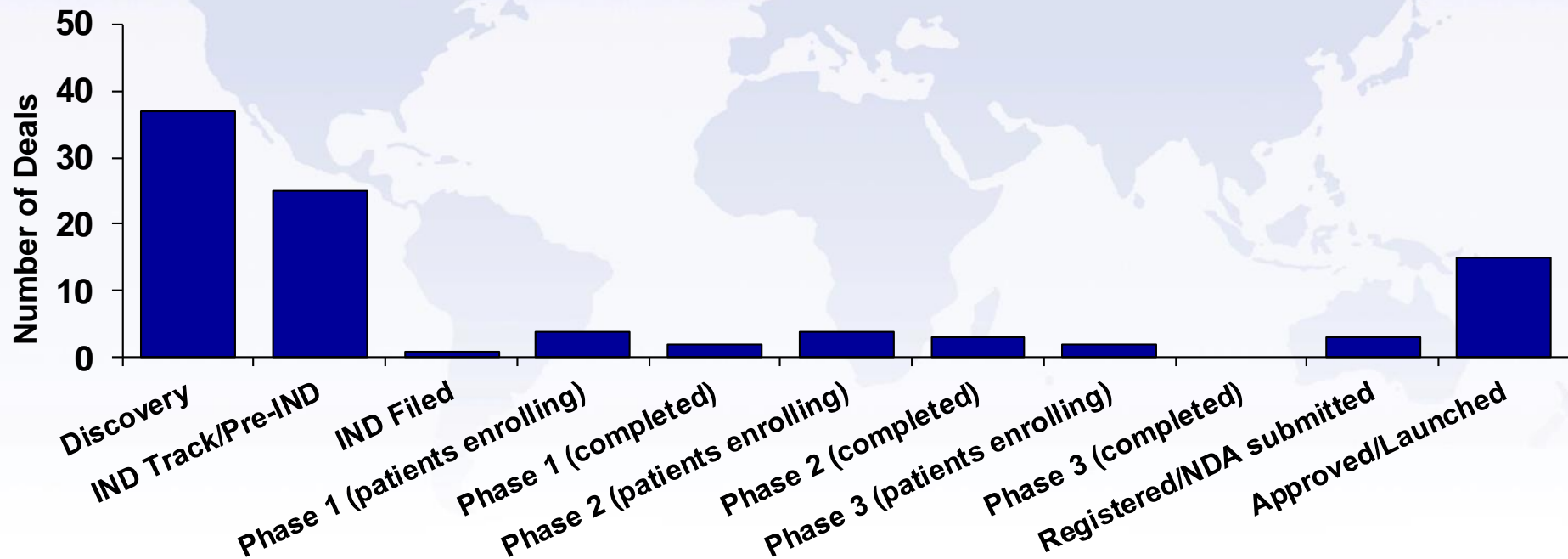


Q6. What is the Field of Use? (there can be more than one response)

# A Profile of Responses – 2016 Survey

## Stage of Development\*

*As in earlier surveys, the responses were weighted heavily to early stage deals.*



(n = 96 deals)

Q9. At closing, what was the most advanced stage of development of the product for the principle indication?

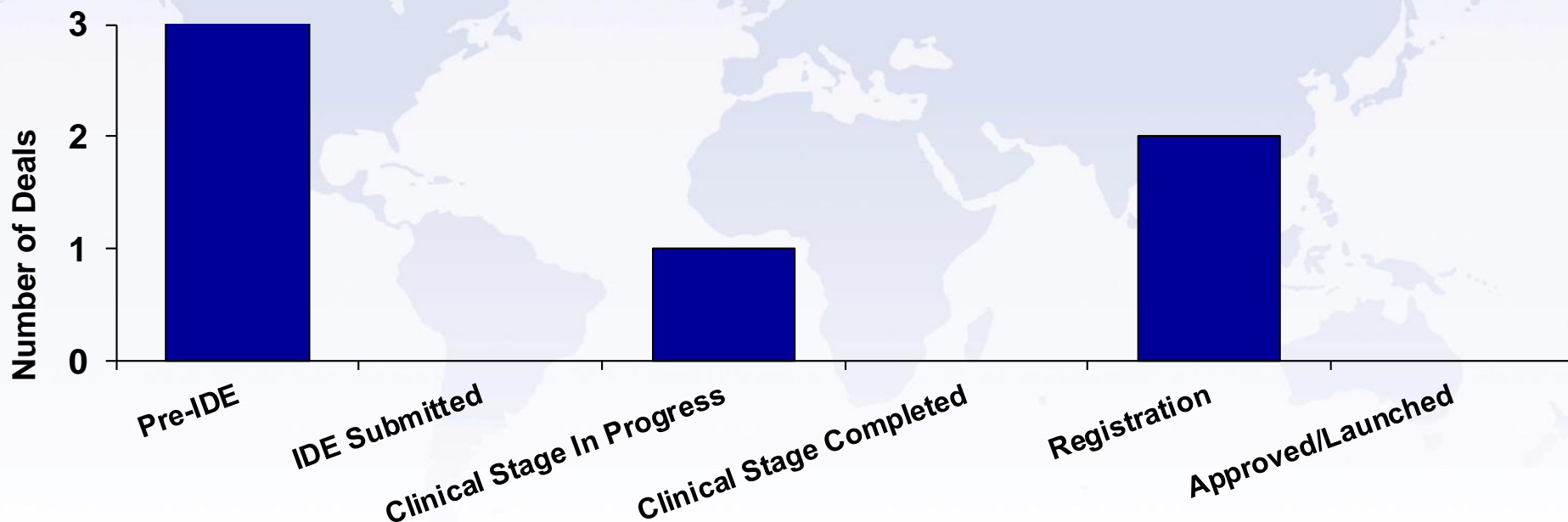
\*- excludes IVD deals



# A Profile of Responses – 2016 Survey

## Stage of Development – Diagnostics

***The diagnostic deals were spread across development maturity levels—in earlier years, diagnostic deals had been weighted toward early stage assets.***



Note additional response categories were allowed in this survey, 3 described the deal as “Research Use Only”, 6 as “Proof of Concept”, 4 as “Prototype”, 2 as “Final Product in Development (including manufacturing development)”, and 2 as “Ready for Commercialization”

(n = 24 deals)

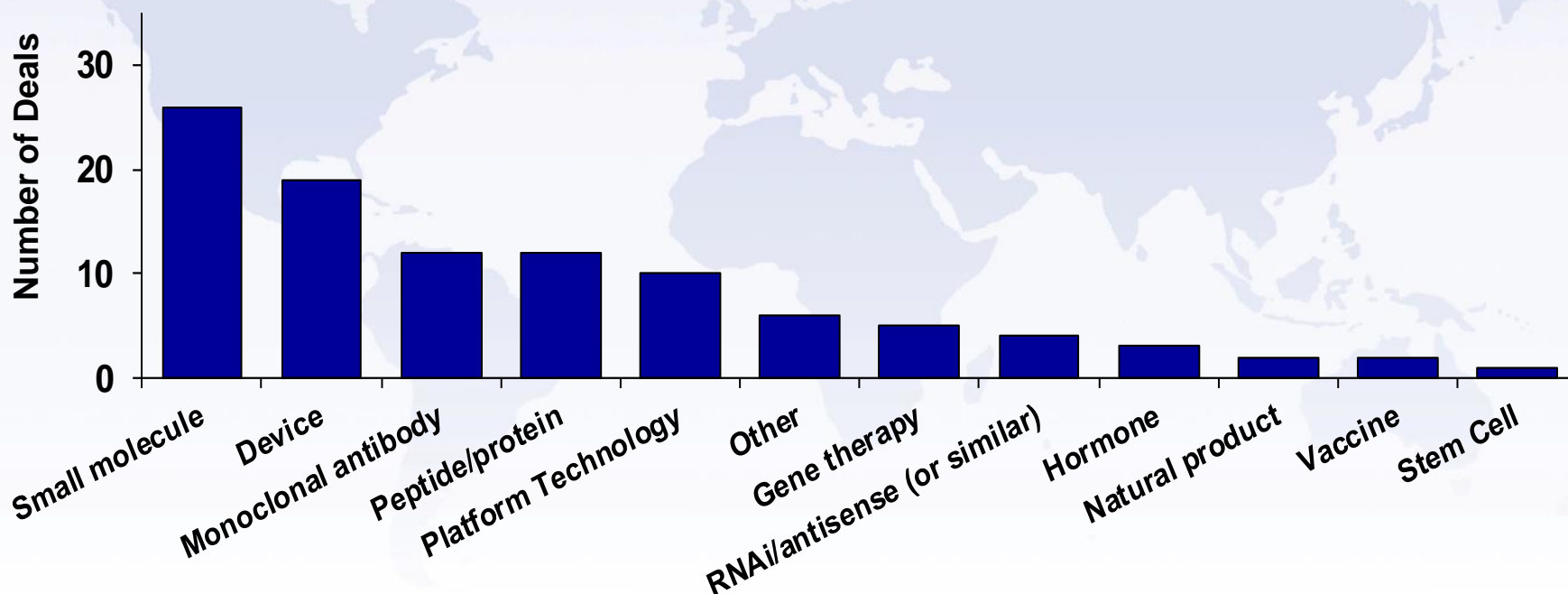


Q9. At closing, what was the most advanced stage of development of the product for the principle indication?

# A Profile of Responses – 2016 Survey

## Type of Product

***While small molecules contributed the highest share (24%), a highly diverse set of product types were represented in the survey responses.***



Note additional response categories were allowed in this survey—6 responded “Diagnostic Based on Types of Product Other Than Those Listed.”

(n = 108 deals)



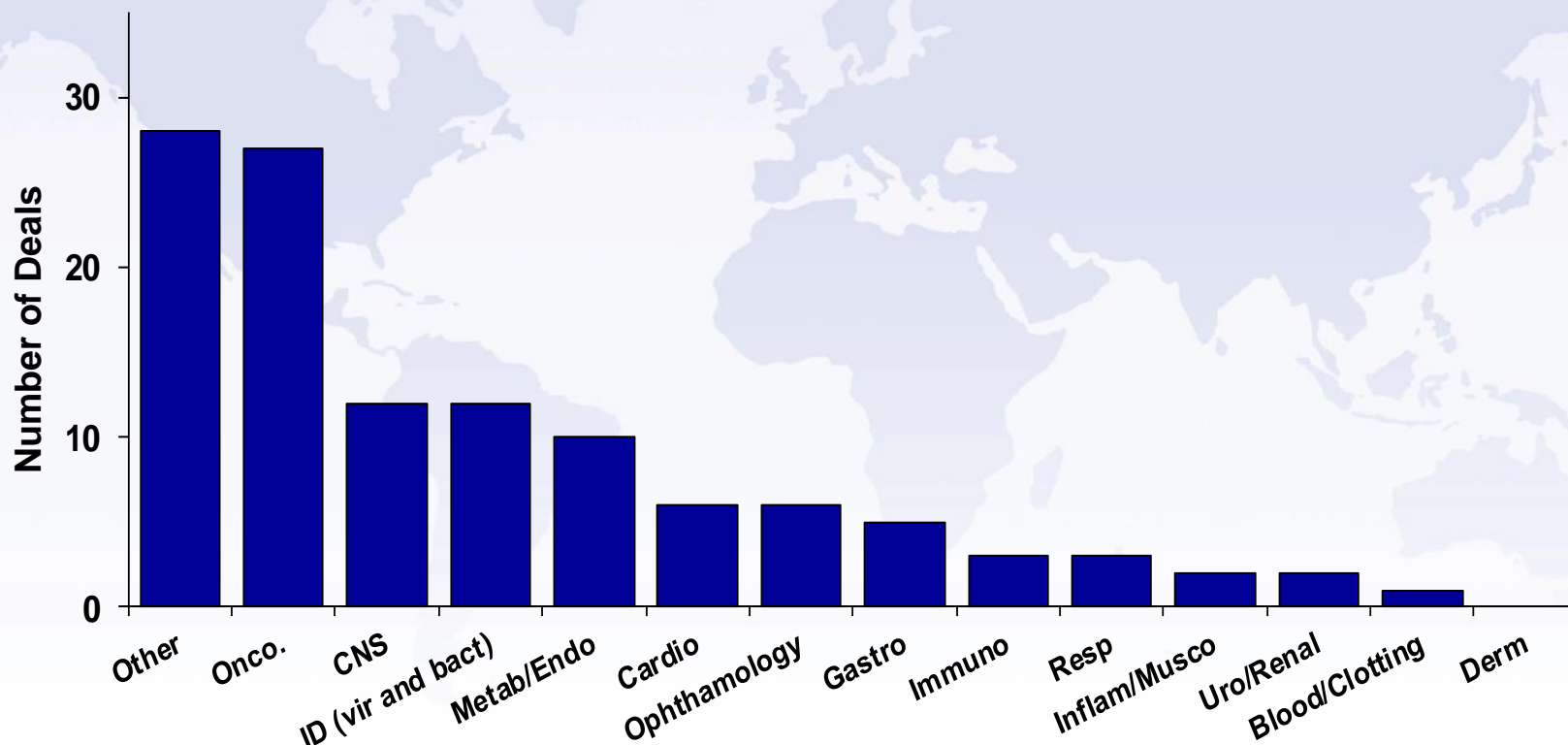
Q10. Please choose the type or category of product that was the subject of this deal?



# A Profile of Responses – 2016 Survey

## Therapeutic/Diagnostic Area

*The diversity of survey responses is seen again when we look at the spread across therapeutic areas with Oncology being the largest area reported.*



(n = 117 deals)

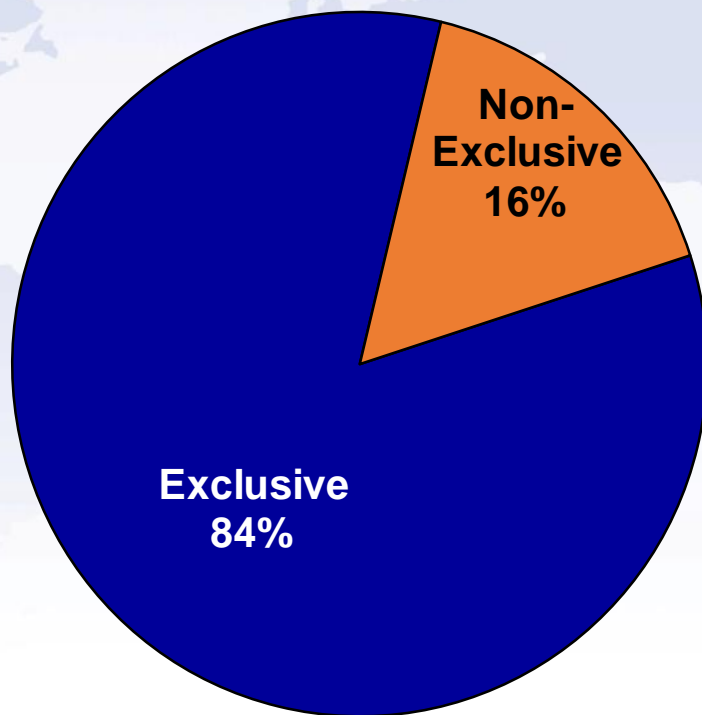
Q11. Please specify the principle therapeutic (or diagnostic) area for which the product was licensed?



# A Profile of Responses – 2016 Survey

## *Exclusivity*

***A strong majority of the deals were exclusive.***



(n = 117 deals)

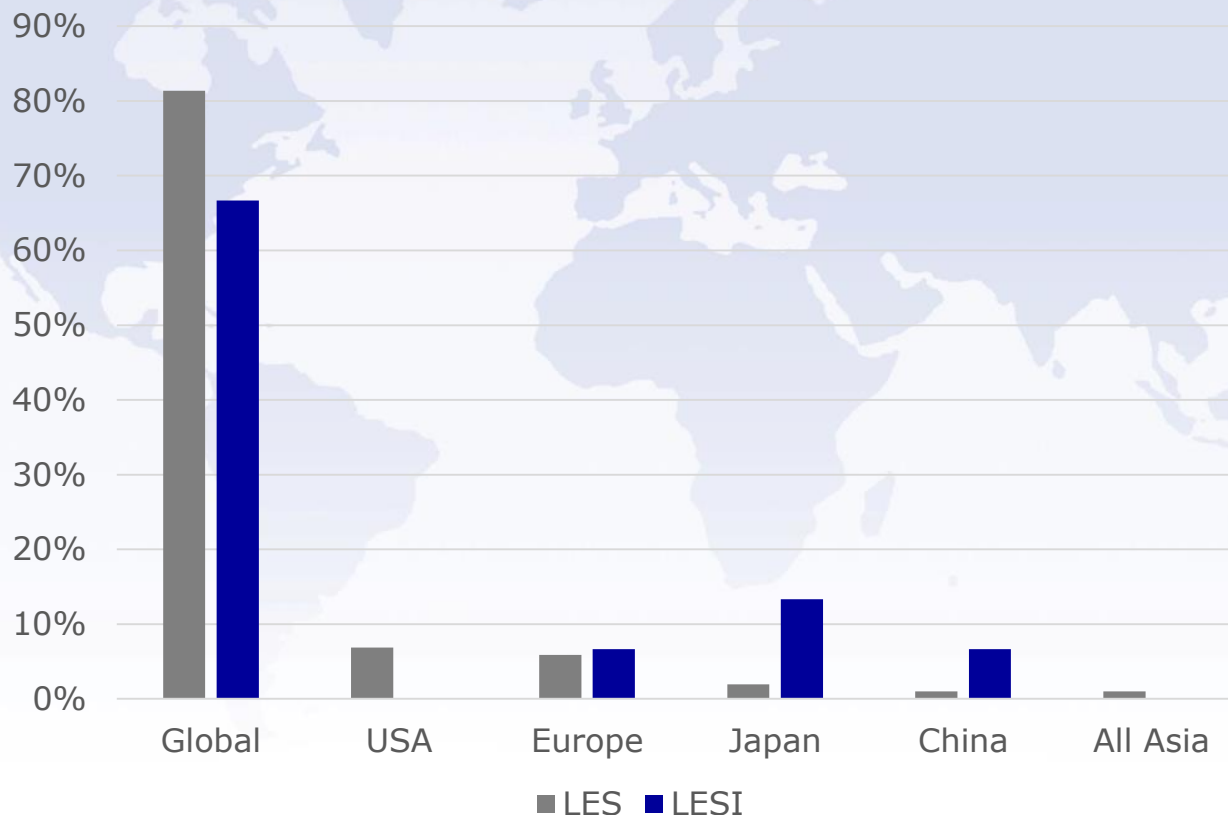


Q2: Was this exclusive or non-exclusive to the Parties?

# A Profile of Responses – 2016 Survey

## *Territory\**

***Almost 80% of all deals were global.***



(n = 117 deals)

\*Total is >100% due to non-global deals having more than one region

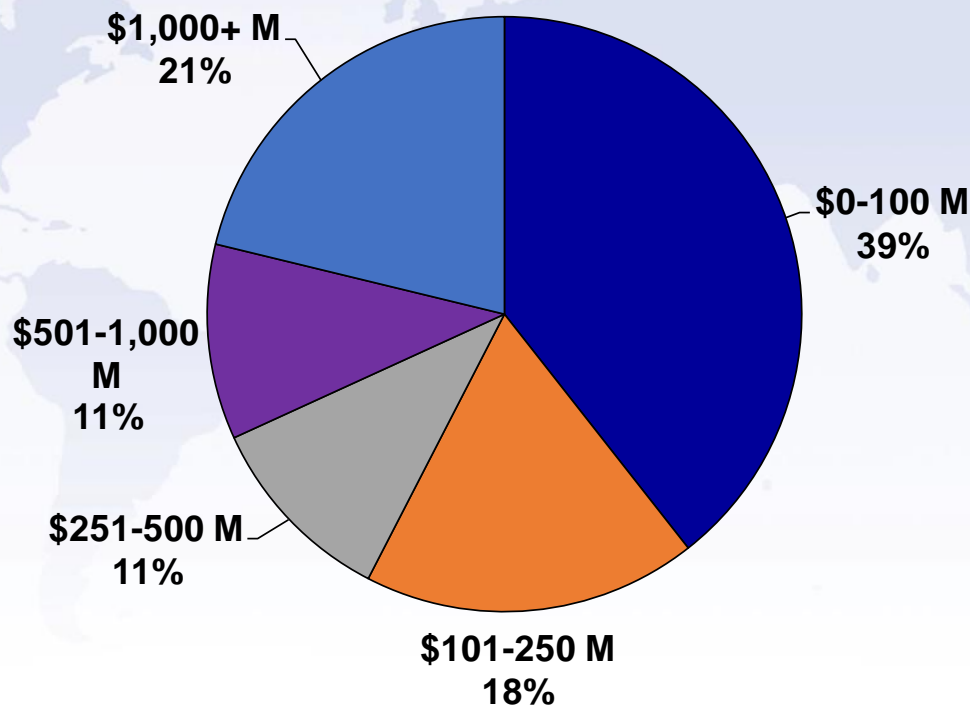


Q9: Which territories were included in the deals?

# A Profile of Responses – 2016 Survey

## *Peak Sales in Territory\**

***Approximately 40% of the deals were for products with expected sales <\$100 M.***



(n = 66 deals)

Q19: Please indicate the estimated Total peak sales for all territories.

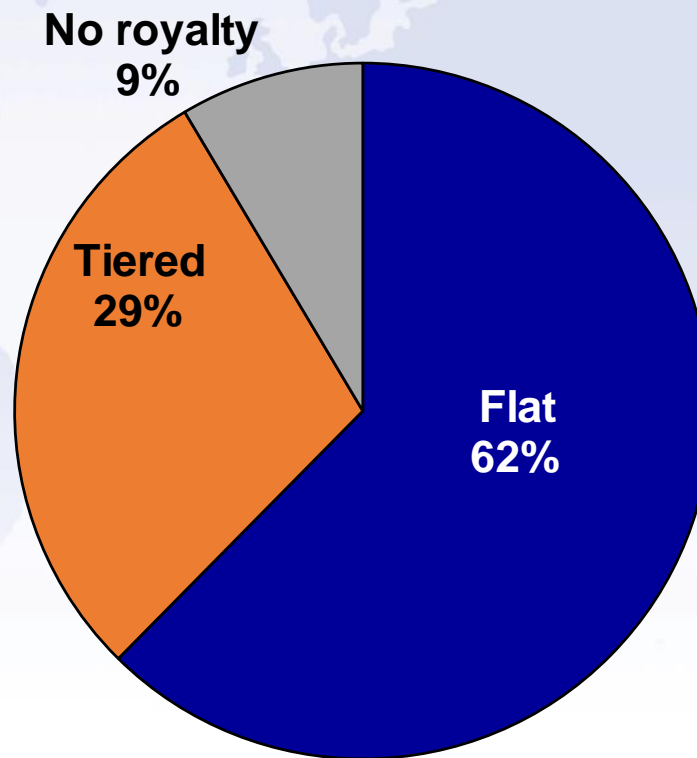
\*Excludes 51 submissions listed as NA or DNK as potential sales estimate



# A Profile of Responses – 2016 Survey

## Royalty Rate Structure

*A majority of the deals had royalty rates with flat (or fixed) royalty rates.*



(n = 117 deals)

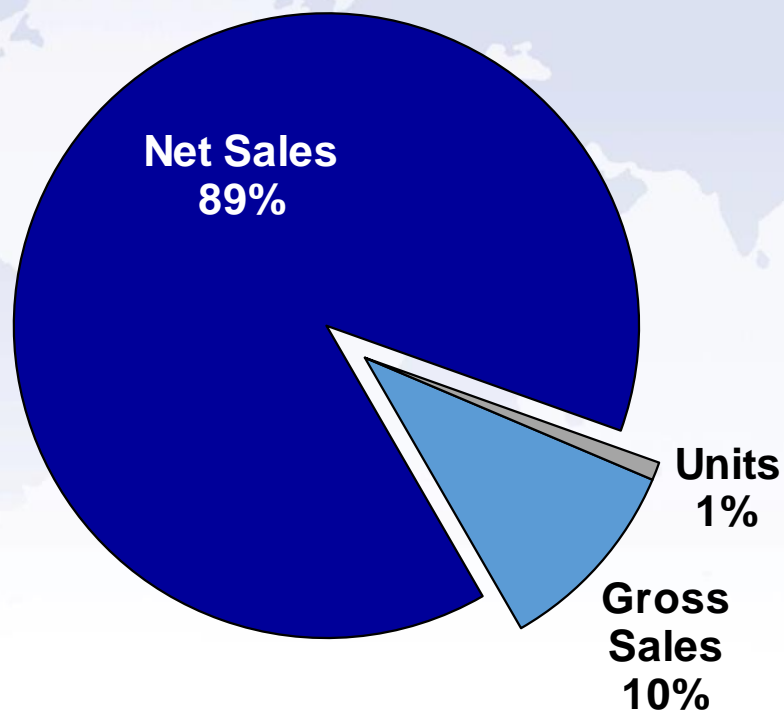


Q12. Did this deal have flat or tiered royalties?

# A Profile of Responses – 2016 Survey

## *Royalties Paid On\**

*In a vast majority of the deals, the royalties are paid on net sales.*



(n = 107 deals)

Q12a. Are the royalties paid on?

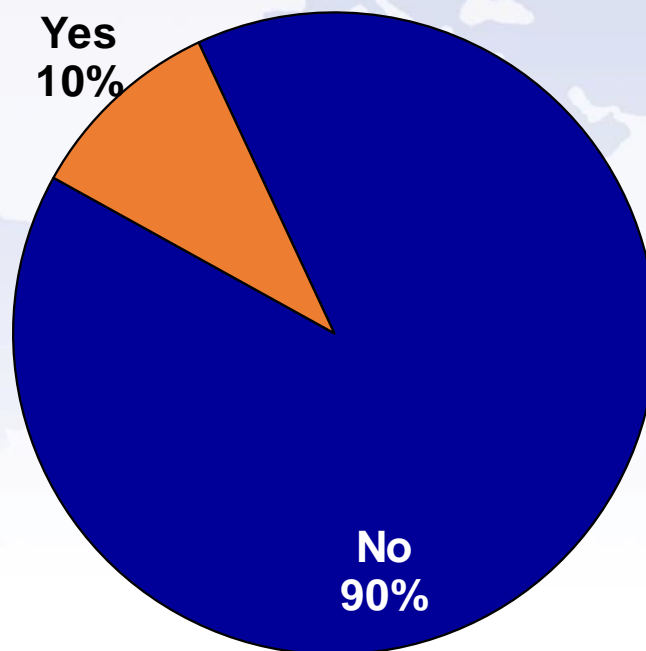
\*Excludes 10 submissions reporting no royalty being paid



# A Profile of Responses – 2016 Survey

## Profit Sharing

**90% of deals without royalties did not have a profit sharing component.**



(n = 10 deals)

Q15: For deals without royalties, do they have a profit sharing component?

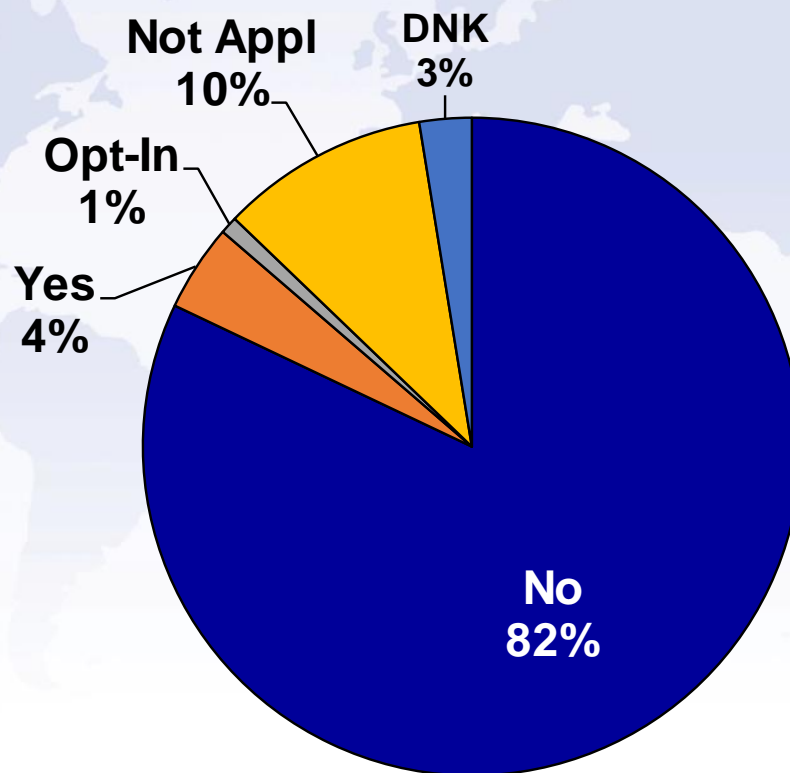




# A Profile of Responses – 2016 Survey

## *Inclusion of Co-Promotion / Co-Marketing*

***Co-promotion or Co-marketing terms were reported in 4% of the deals decreasing from 8% in the last survey.***



(n = 117 deals)



Q20: Did this deal include shared commercialization rights?

# Royalty Analysis



# Royalty Analysis

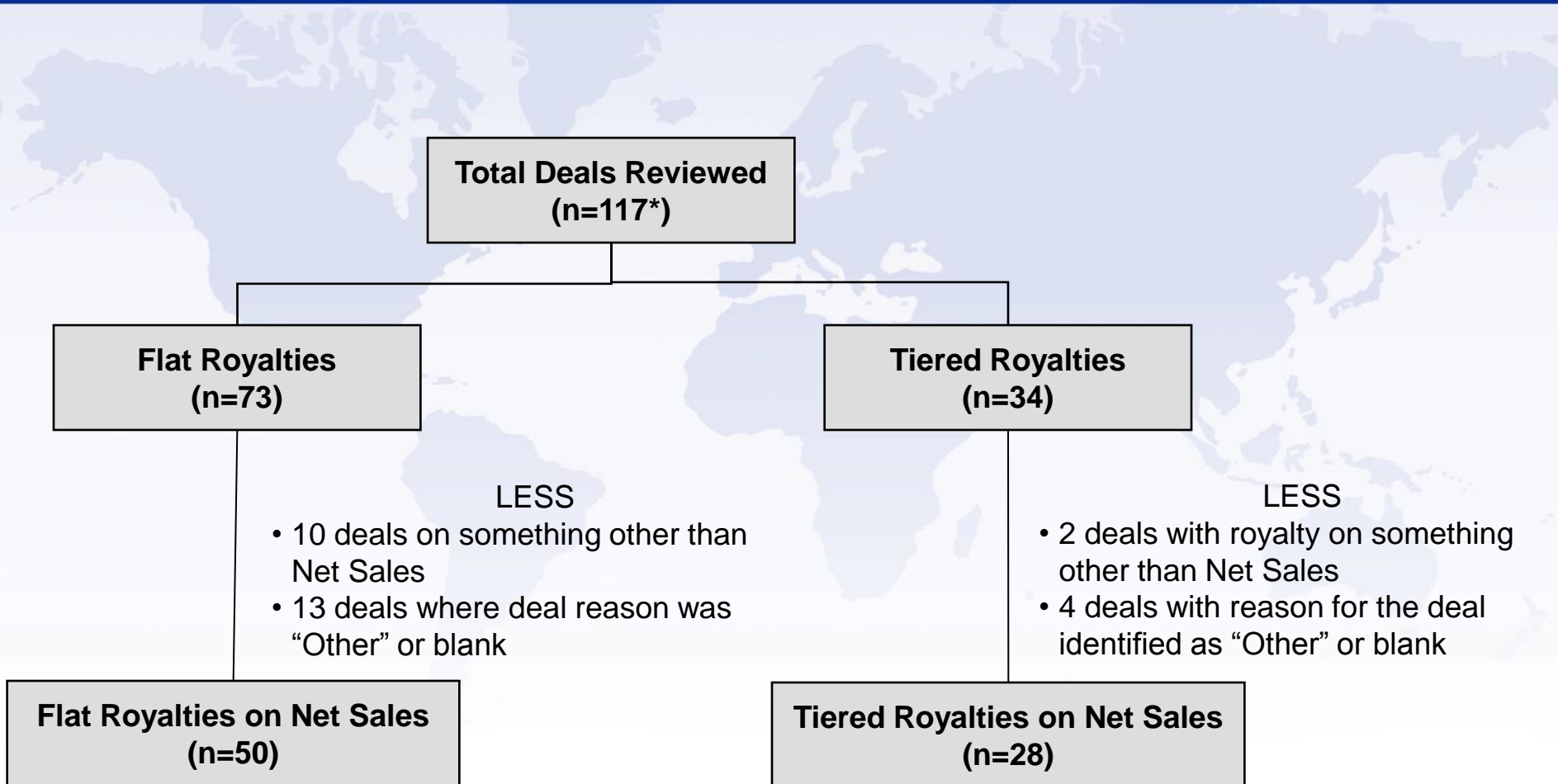
## *Table of Contents*

Analysis Structure	42
Flat Royalties	45
Combined Surveys – Average Royalties by Stage of Development	47
Combined Surveys – Distribution of Royalty Rates by Stage of Development	49
Combines Surveys – Preclinical Deals by Therapeutic Areas	52
Combined Surveys – Platform Deals	56
Flat vs Tiered Royalties for Early Stage Platform Assets	58
Tiered Royalties	60
Tiered Royalties by Stage of Development	66
Comparison of Flat vs Tiered Royalties	74
Diagnostic Deals	76
Royalty Rates – Summary of Observations	83



# Royalties

## Analysis Structure



Q12: Did this deal have flat or tiered royalties?

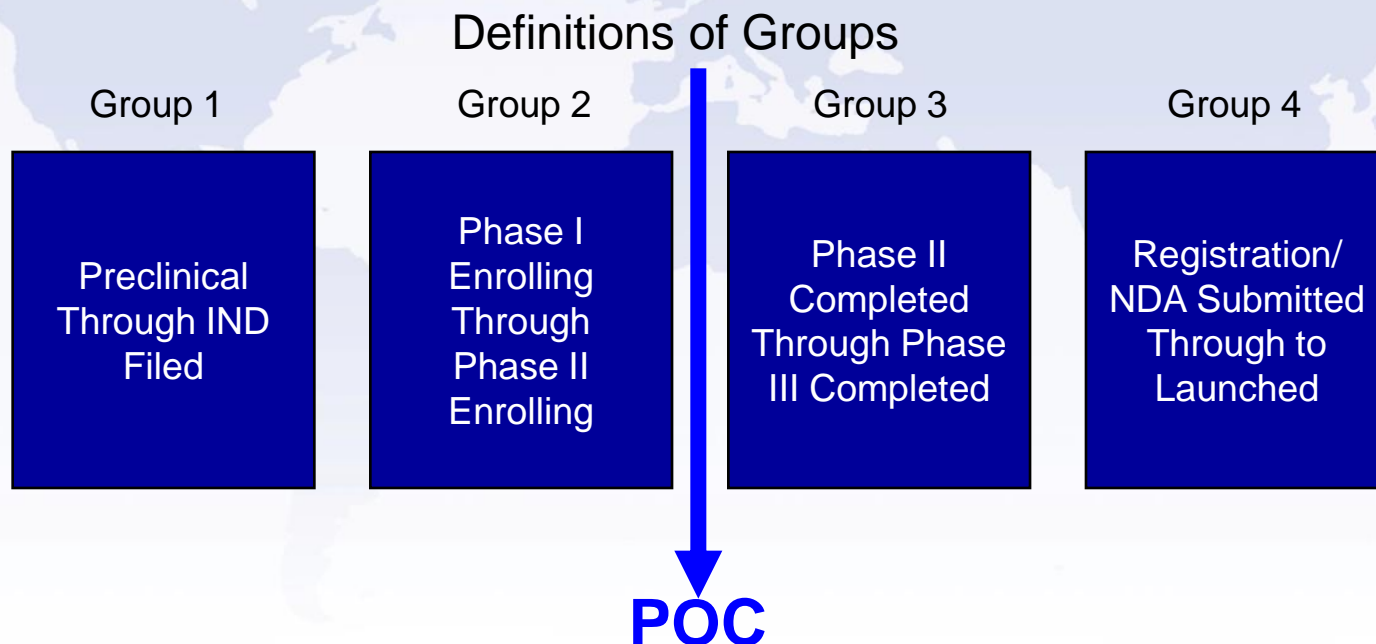
Q12a: Are the royalties paid on:

\*10 deals had no royalty component.

# Royalties

## Analysis Structure

***At several points in this analysis, we have grouped the observations according to key points in development.***

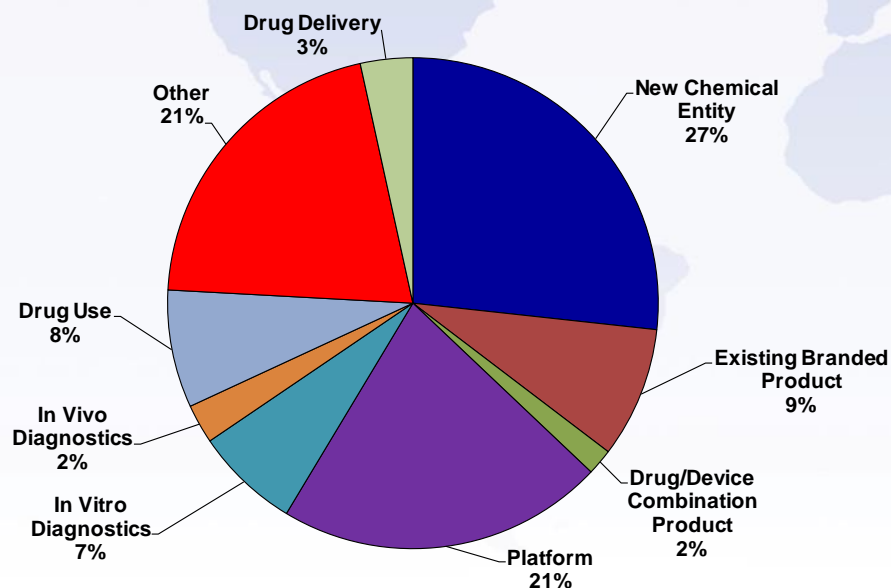


# A Profile of Responses – 2016 Survey

## Analysis Structure

*The deals were organized within groups that consolidated “product,” “platform,” and “diagnostic” assets.*

**Distribution of Deals (2016)**



(n = 116 deals)

<b>Product</b>	Drug Delivery Product Deal
	Drug/Device Combination Product Deal
	Existing Branded Product Deal
	New Chemical Entity Deal
<b>Platform</b>	Drug Use Deal
	Drug Delivery Platform Deal
	Platform Deal
	Life Sciences Platform Deal
<b>Diagnostic</b>	Drug Platform Deal
	In Vitro Diagnostics Deal
<b>Other</b>	In Vivo Diagnostics Deal
	Drug/Drug combination Product Deal
	Marketed Branded Product Deal
	Other (please specify)
	(blank)



# Flat Royalties

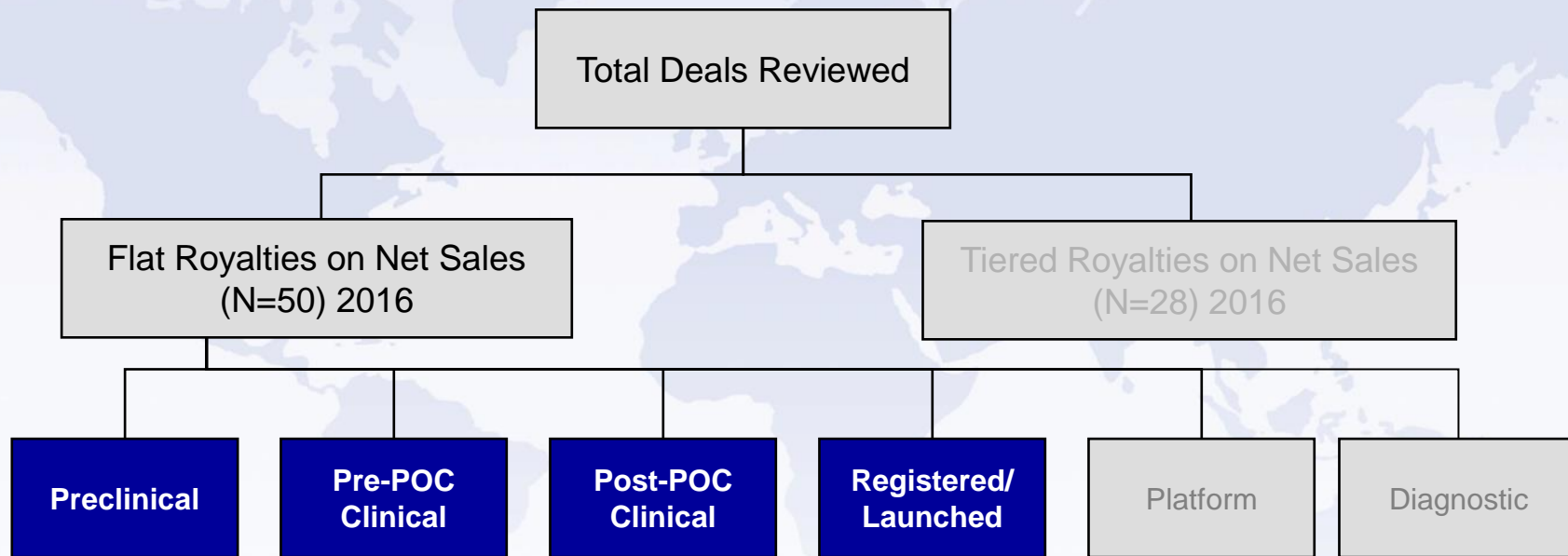




# Flat Royalties

## Introduction

*The robust data set now allows review of deals in a range of categories.*



2016	19	3	2	3	15	8
2014	16	1	2	4	19	6
2012	11	4	4	8	8	6
2009	27	6	5	7	14	10
<b>Total</b>	<b>73</b>	<b>14</b>	<b>13</b>	<b>22</b>	<b>56</b>	<b>30</b>

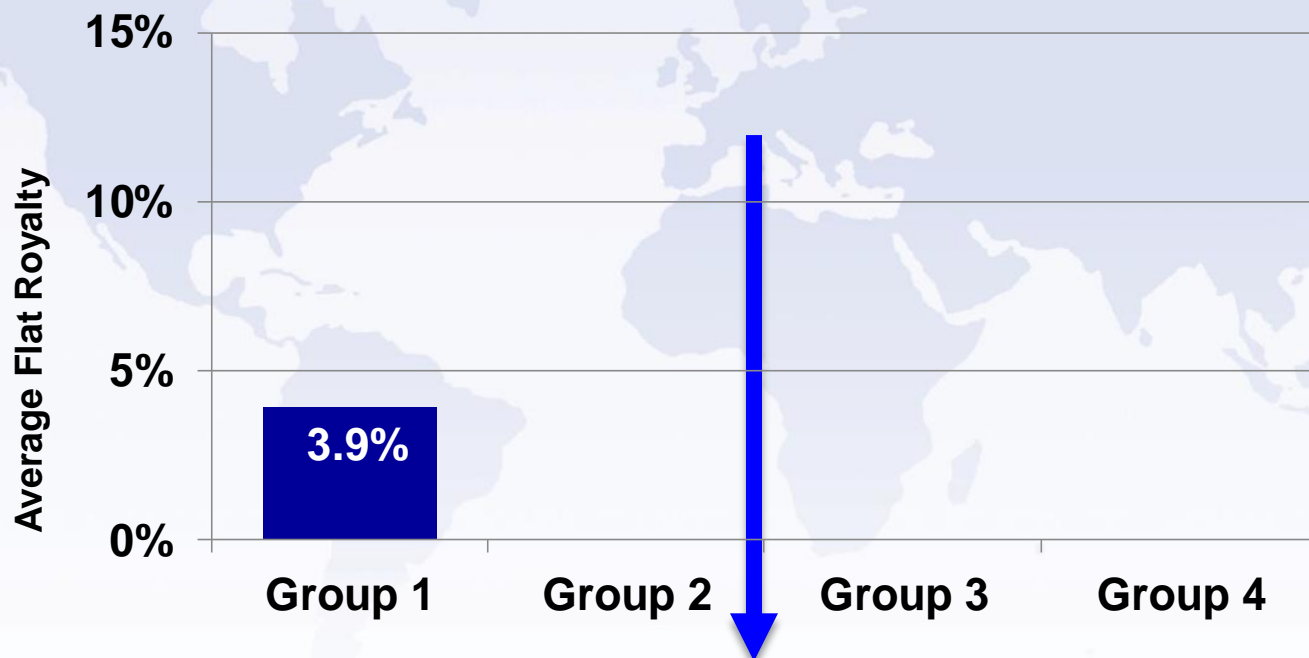
Adequate data for analysis. Not reported when deal number  $\leq 5$



# Flat Royalties - 2016 Survey

## *Average Royalty by Stage of Development*

*In the 2016 survey, the average royalty for the earliest stage products was approximately 4%.*



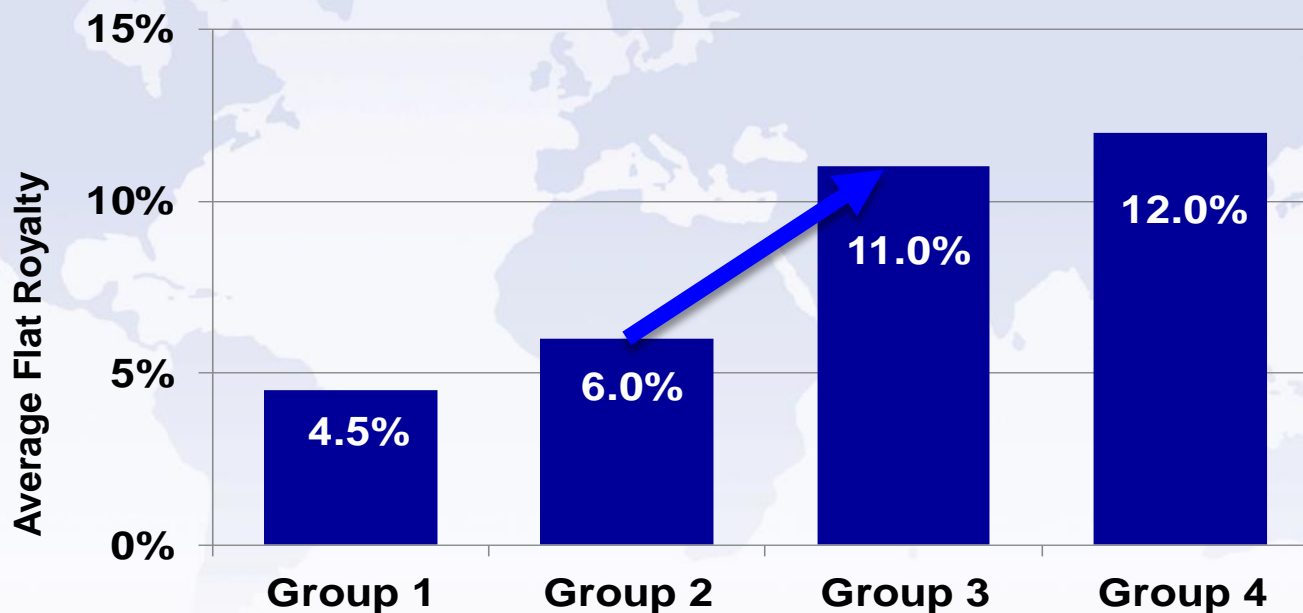
No. of deals	19	3	2	3
Min	1%			
Median	3.25%			
Max	12%			



# Flat Royalties - Combined Surveys

## *Average Royalty by Stage of Development*

***Drawing information from across the four most recent surveys reveals a substantial increase in royalty rate for assets that have achieved proof of concept.***



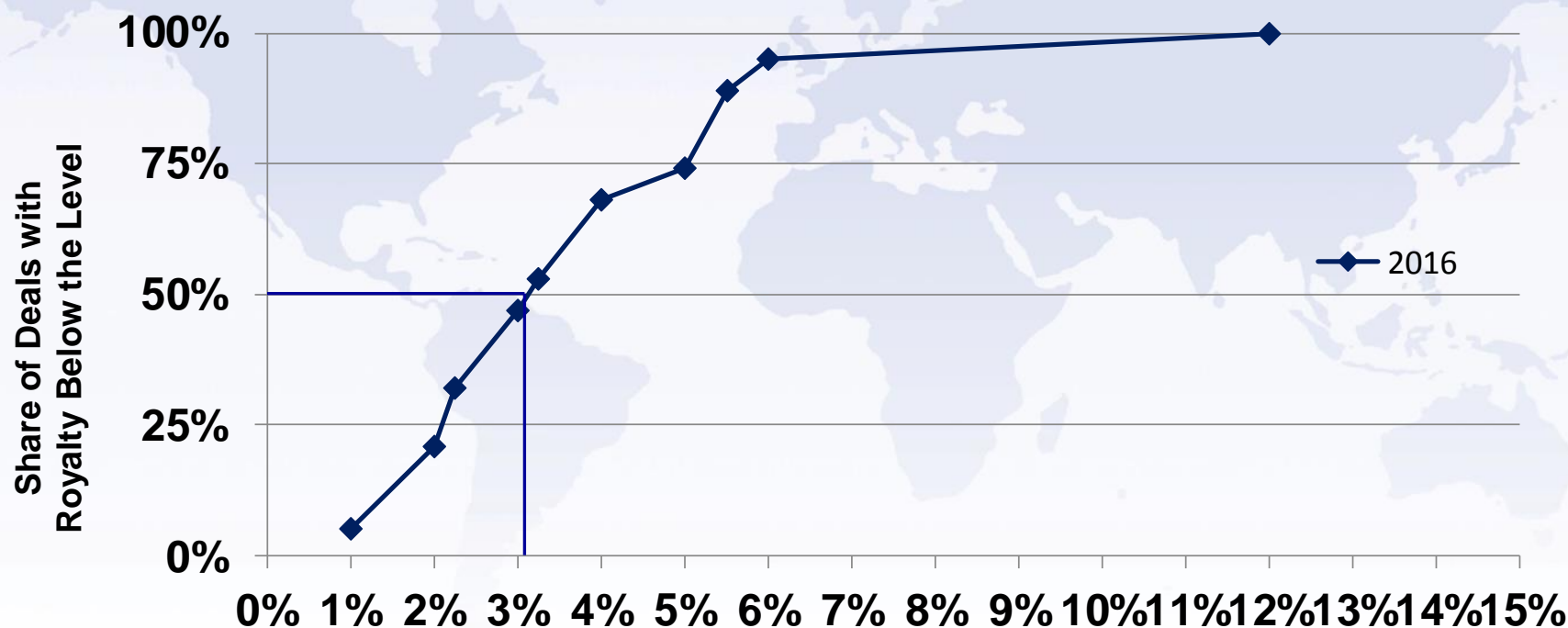
No. of deals	73	14	13	22
Min	0.8%	1.5%	1%	1.25%
Median	4%	3%	12.5%	7%
Max	15%	20%	20%	40%



# Flat Royalties - 2016 Survey

## *Distribution of Flat Royalty Rates (Preclinical)*

***In the 2016 survey, a majority of flat rate preclinical deals had royalty rates below 4%.***



**Flat Royalty Rate (%) – Preclinical (Group 1) Deals Only**

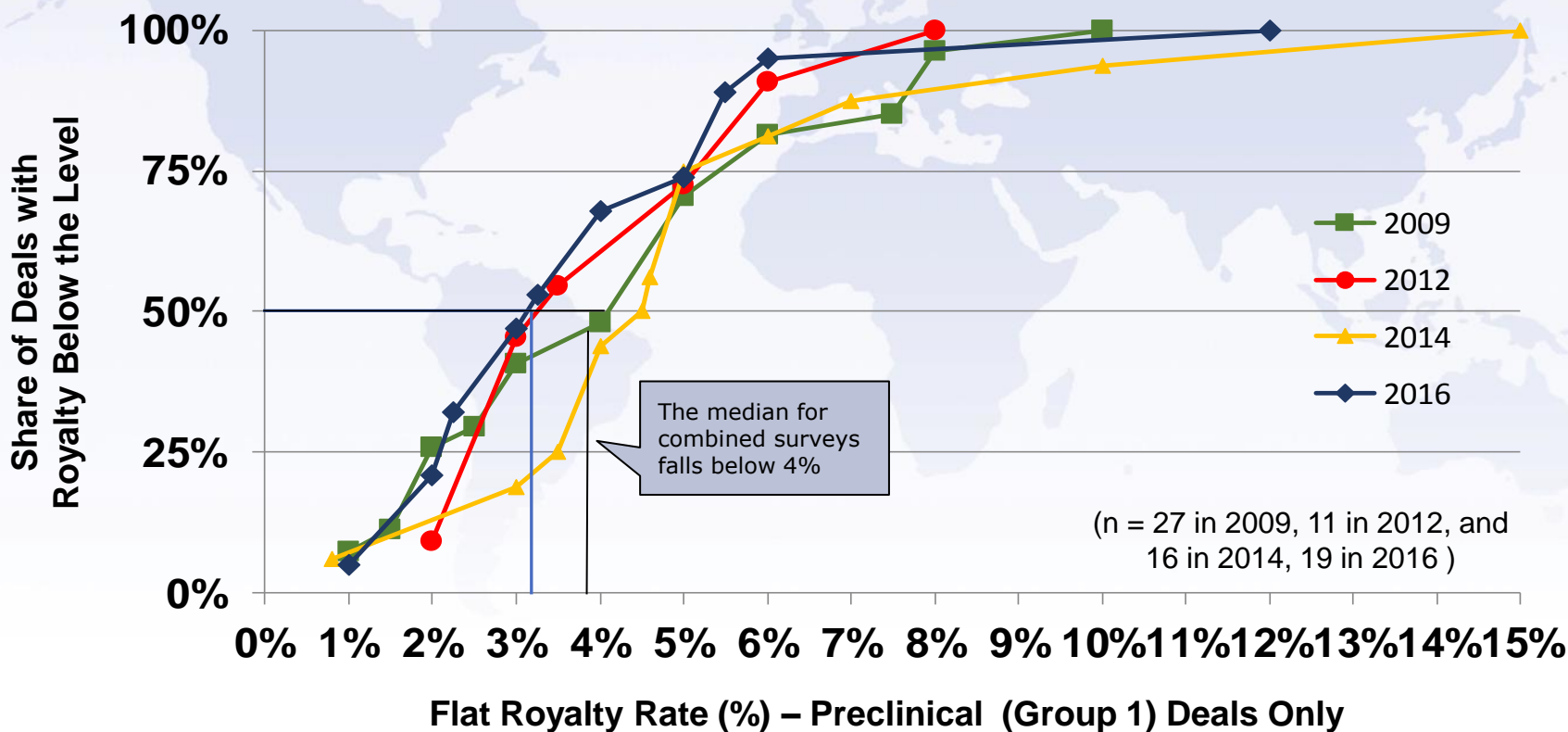
(n = 19)



# Flat Royalties - Comparison of Surveys

## *Distribution of Flat Royalty Rates (Preclinical)*

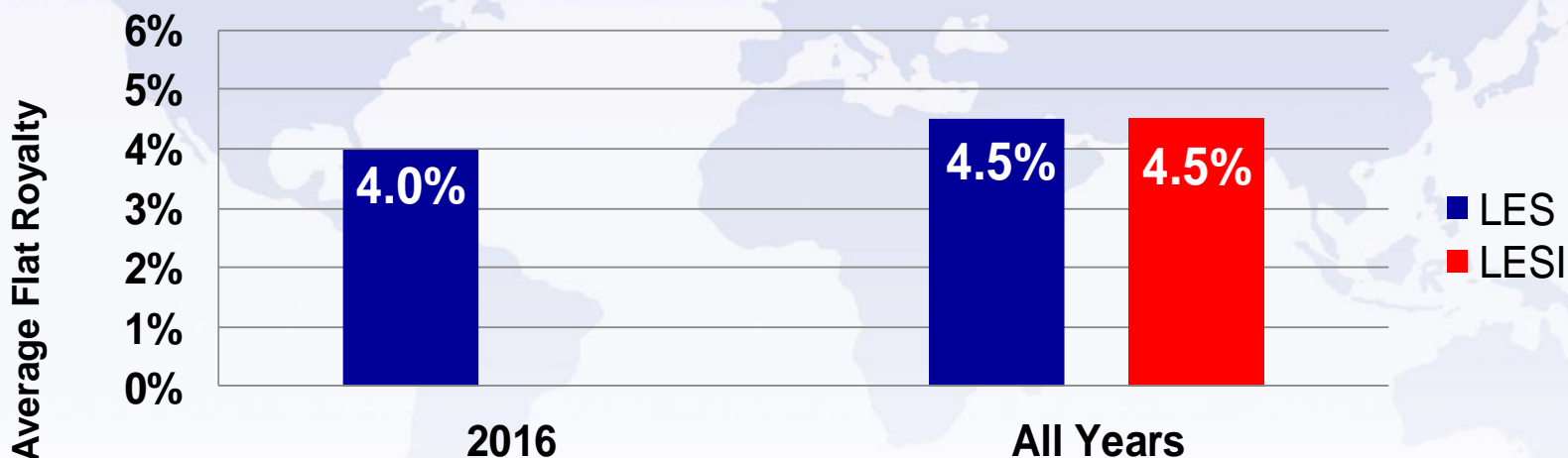
***Although this year's survey had a greater share of deals with royalties below 4%, the general distribution of royalty levels was similar to earlier surveys.***



# Flat Royalties – 2016 and Combined Survey

## *Preclinical Deals by Respondent's Location*

*Using the combined survey to compare LES (US/Canada) and LESI responses, it appears, respondent's location had no meaningful impact on the royalty for preclinical deals.*



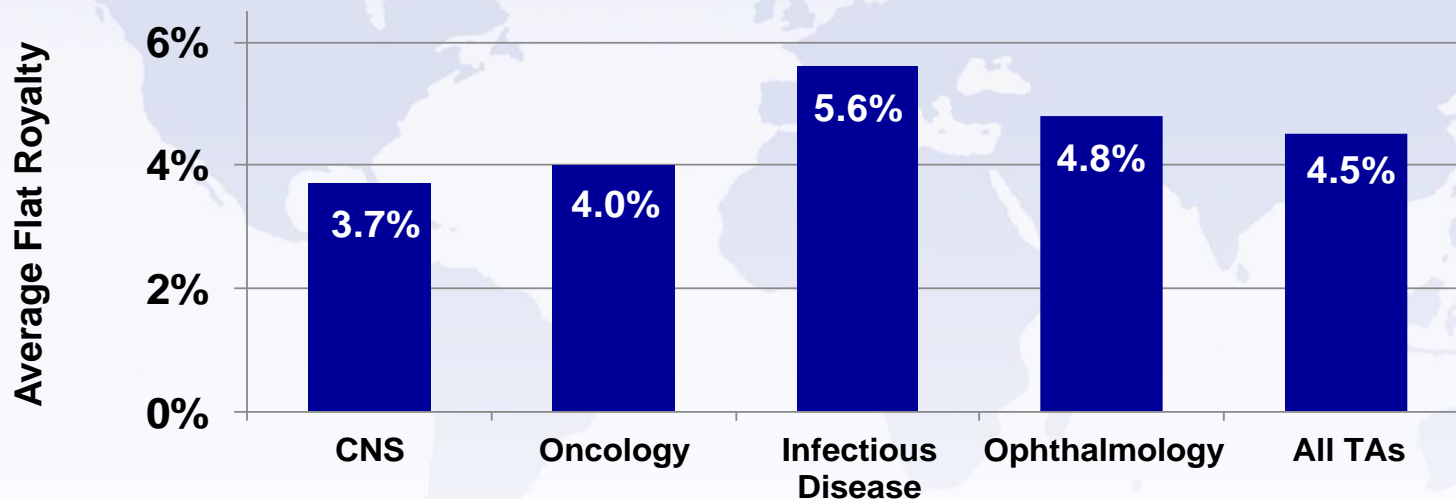
No. of Deals	17	48	25
Min	1.0%	1.0%	0.8%
Median	3.2%	4.0%	5.0%
Max	10%	15.0%	10.0%



# Flat Royalties - Combined Survey

## *Preclinical Deals by Therapeutic Area*

***Within early stage assets, the highest royalty levels are observed for products targeting infectious disease.***



No. of Deals	15	18	14	6	73
Min	1.0%	0.8%	2.0%	3.0%	0.8%
Median	3.0%	4.0%	5.0%	5.0%	4.0%
Max	7.0%	10.0%	10.0%	6.0%	15.0%

*CNS includes: CNS-psychiatric, CNS-neurological/neurodegenerative, CNS-pain, and CNS-other*

*Infectious disease includes: infectious disease-bacterial, infectious disease-viral, and infectious disease-other*

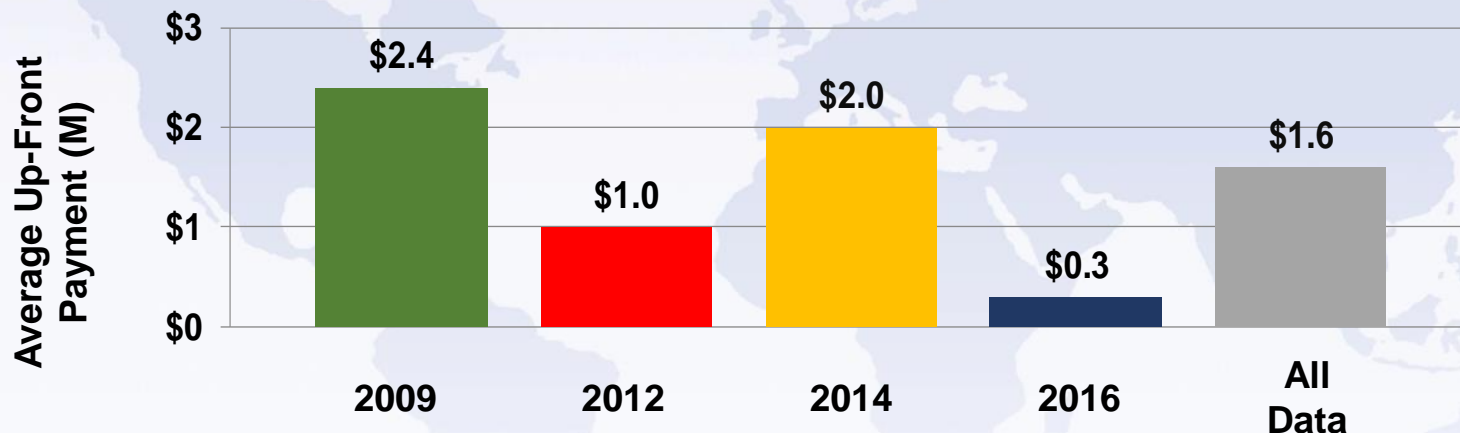




# Flat Royalties - Combined Surveys

## *Up-Front Payments – Early Stage*

***Consistent with earlier surveys, the reported up-front payments for early stage assets were modest.***



No. of Deals	22	8	13	14	57
Min	\$10K	\$2K	\$0K	\$30K	\$0K
Median	\$50K	\$60K	\$1,000K	\$75K	\$110K
Max	\$15.0M	\$6.5M	\$15.0M	\$3.0M	\$15.0M

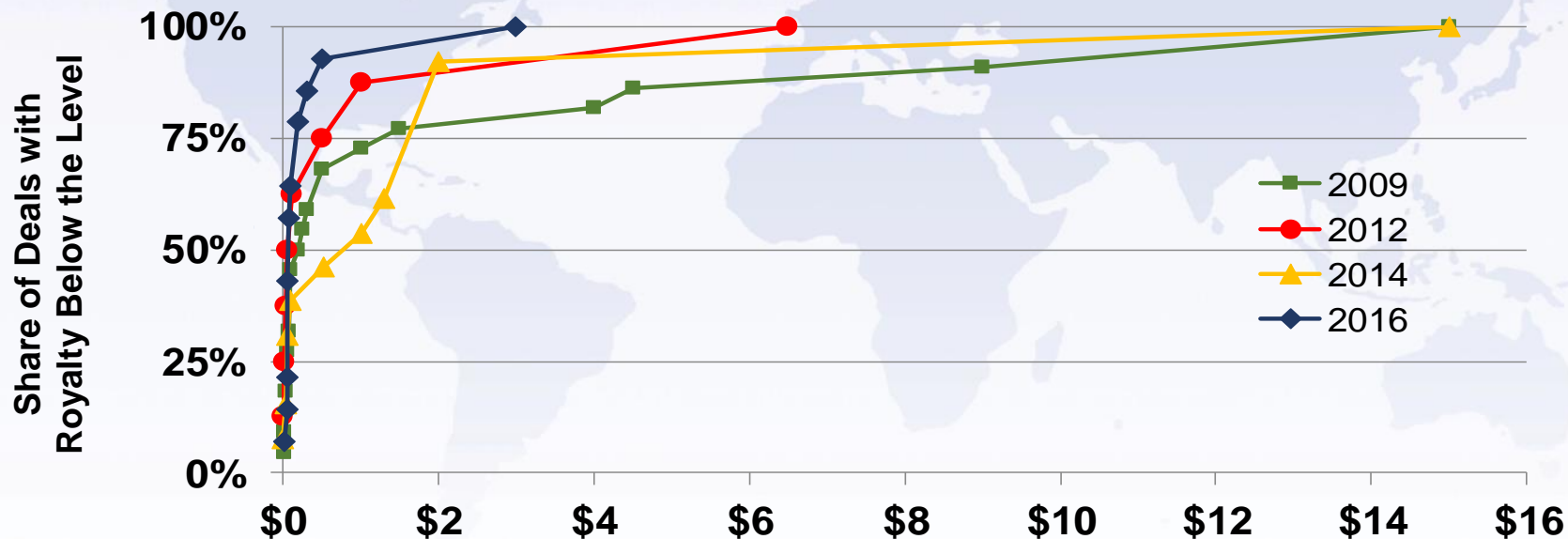


# Flat Royalties - Comparison of Surveys

## Up-Front Payments (Preclinical)

*Early stage asset deals with up-front payments above \$1M are rare.*

Up-Front Payments – Preclinical (Group 1) Deals Only

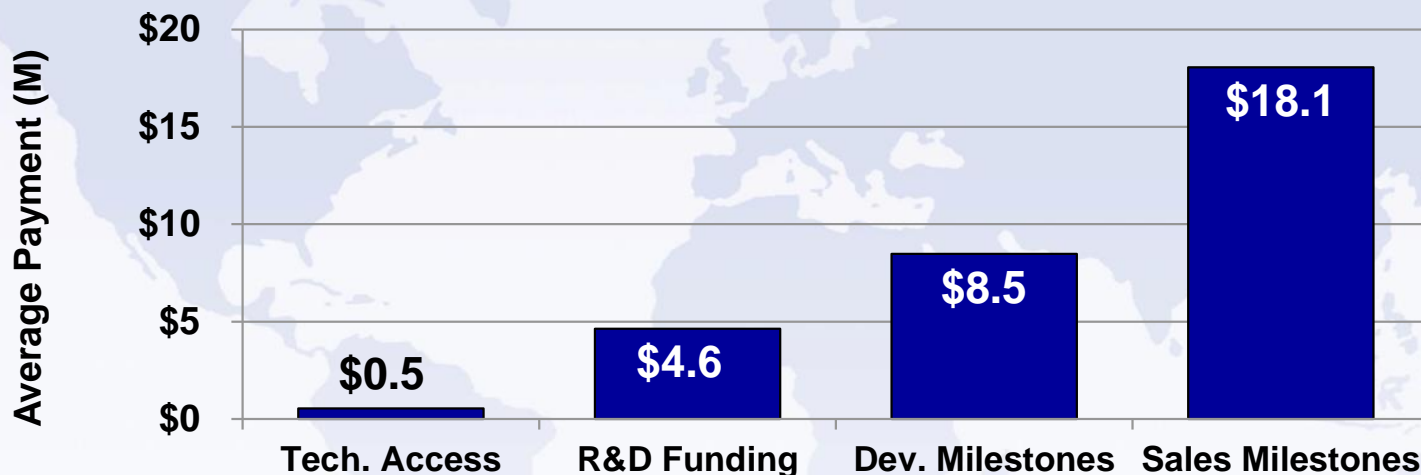


(n = 22 in 2009, 8 in 2012, 13 in 2014, 14 in 2016)

# Flat Royalties - Combined Survey

## Other Payments – Early Stage

*Preclinical stage deals received important milestone payments, but even here, the median values were modest.*



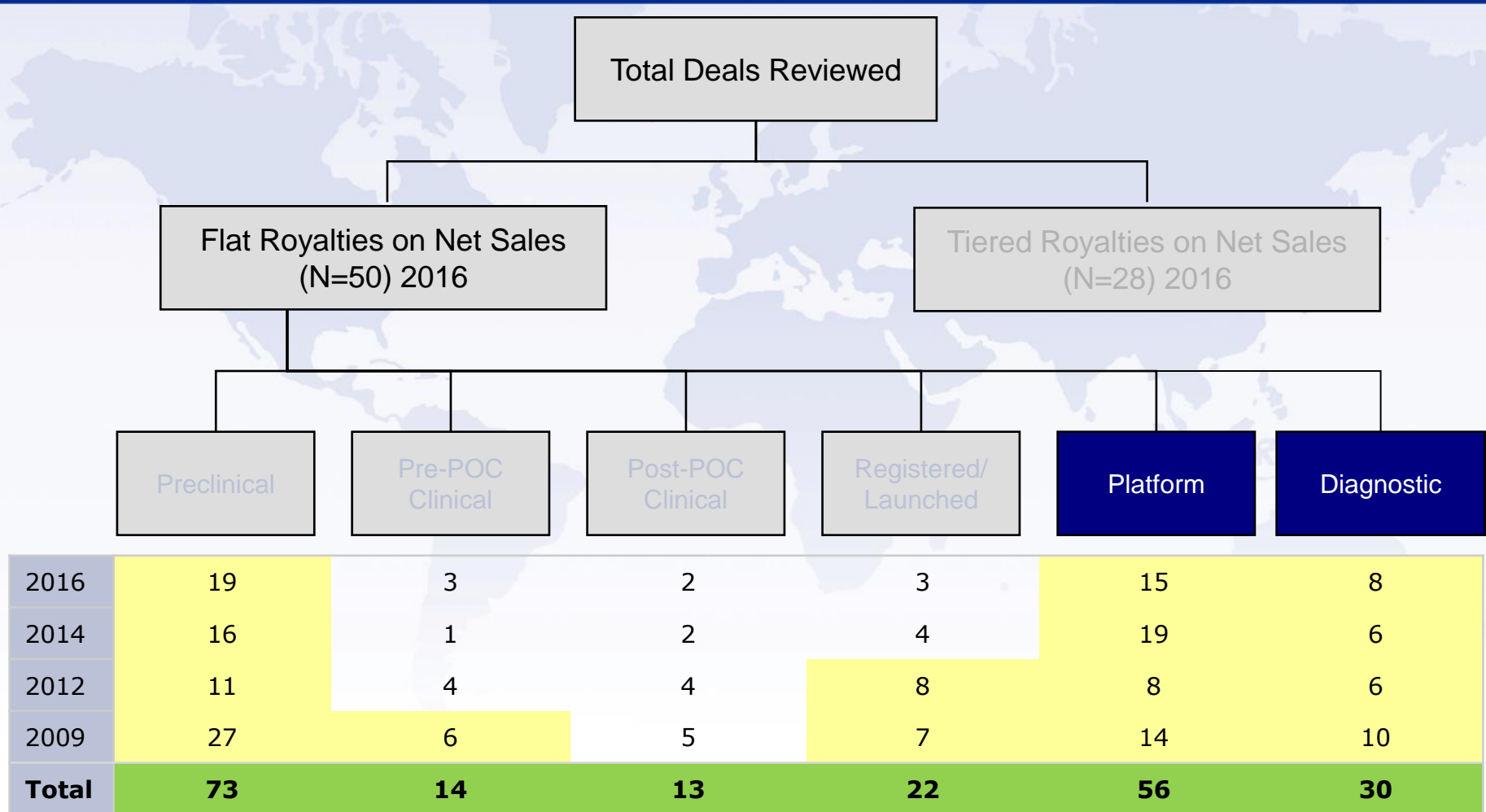
No. of Deals	10	22	52	37
Min	\$0.0M	\$0.15M	\$0.1M	\$0.0M
Median	\$0.3M	\$1.0M	\$1.8M	\$2.5M
Max	\$2.0M	\$55.0M	\$57.0M	\$125.0M

Based on responses within the 73 Group 1 deals where flat royalties were paid on net sales. The values represent the mean and median for those deals where a value was reported (excludes deals where respondent said "Not Applicable" or "Don't Know").



# Flat Royalties

## Platform / Diagnostics Deals



Adequate data for analysis. Not reported when deal number  $\leq 5$

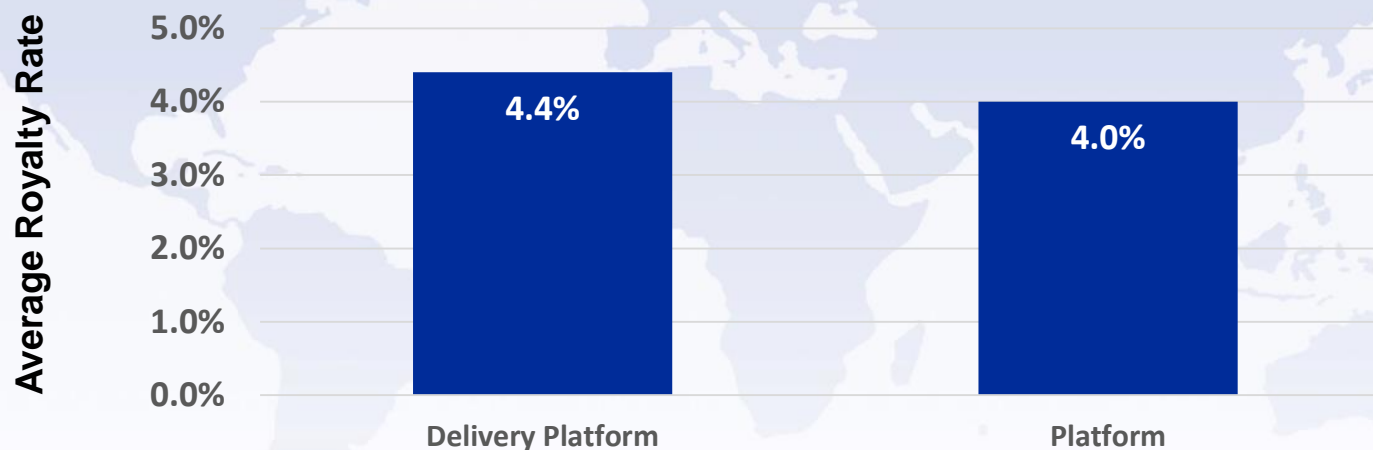


# Flat Royalties – Combined Surveys

## *Platform Deals—Flat Royalties on Net Sales*

***Platform deals that included identifiable early stage assets had similar royalty levels to non-platform deals.***

**Royalty Rates for Platform Deals  
(Group 1 for Delivery and Platform Deals)**



<b>No. of Deals</b>	<b>5</b>	<b>20</b>
<b>Min</b>	<b>2.0%</b>	<b>1.0%</b>
<b>Median</b>	<b>4.0%</b>	<b>3.0%</b>
<b>Max</b>	<b>8.0%</b>	<b>20.0%</b>

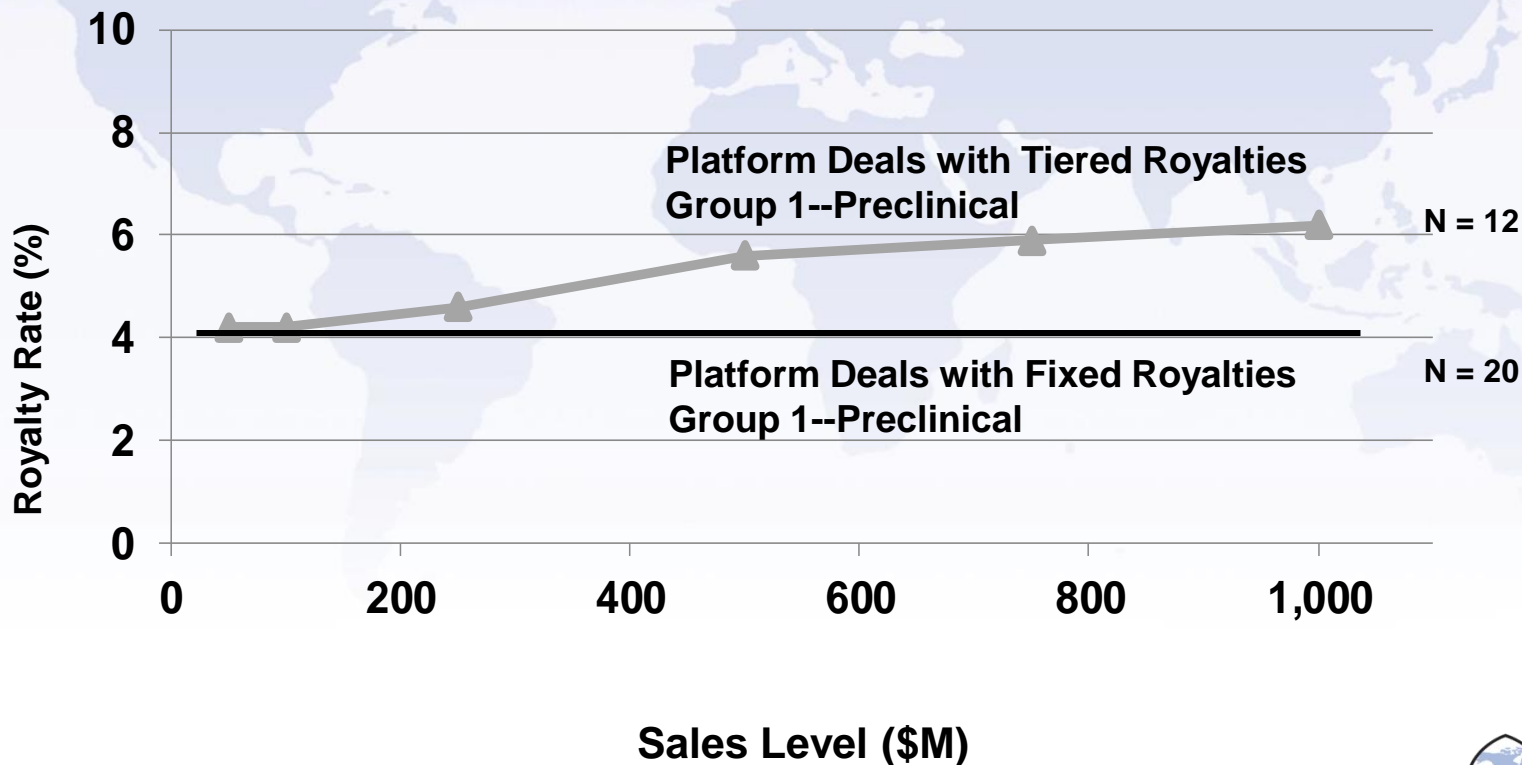
Platform includes responses for both “Drug Platform” and “Platform.”



# Tiered Royalties – 2012-2016 Surveys

## *Tiered/Fixed for Early Stage Platform Assets*

***Platform deals with tiered structures had similar royalties at low revenue levels, but grew with increasing sales.***

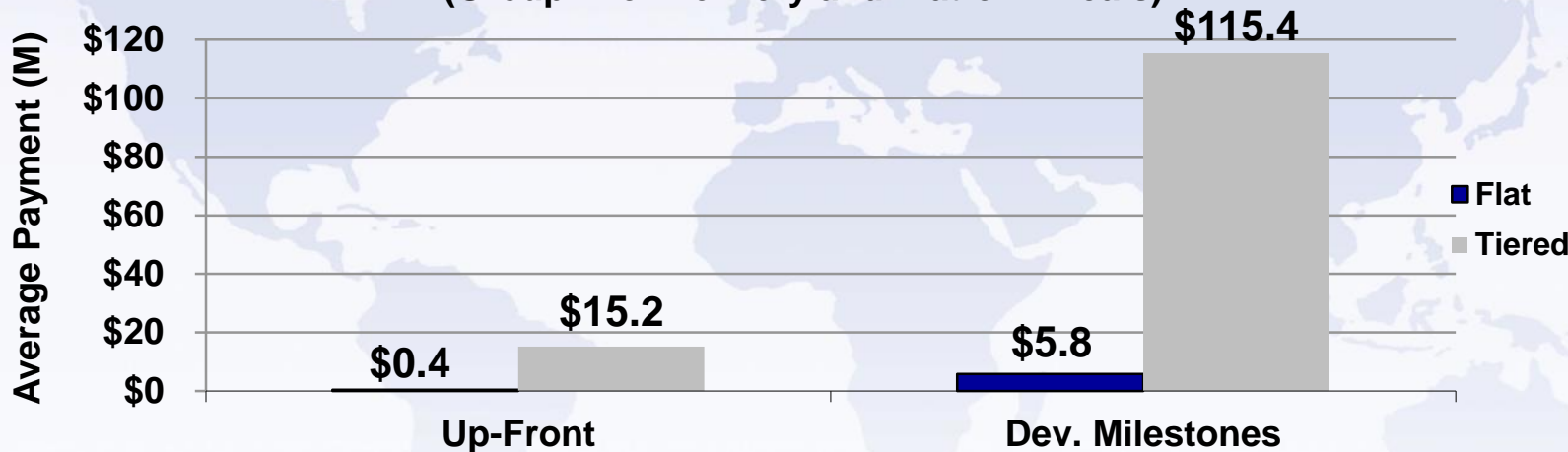


# Flat Royalties – Combined Surveys

## Other Payments- Platform Deals

*A small number of outliers, suggest high average deal payments for early stage platform deals—but the median values are similar to compound-specific deals.*

Other Payments for Platform Deals  
(Group 1 for Delivery and Platform Deals)



No. of Deals	19	11	17	11
Min	\$0K	\$50K	\$10K	\$5,000K
Median	\$40K	\$3.0M	\$75.0K	\$43.0M
Max	\$8.0M	\$75.0M	\$50.0M	\$500.0M

Platform includes responses for both "Drug Platform" and "Platform."



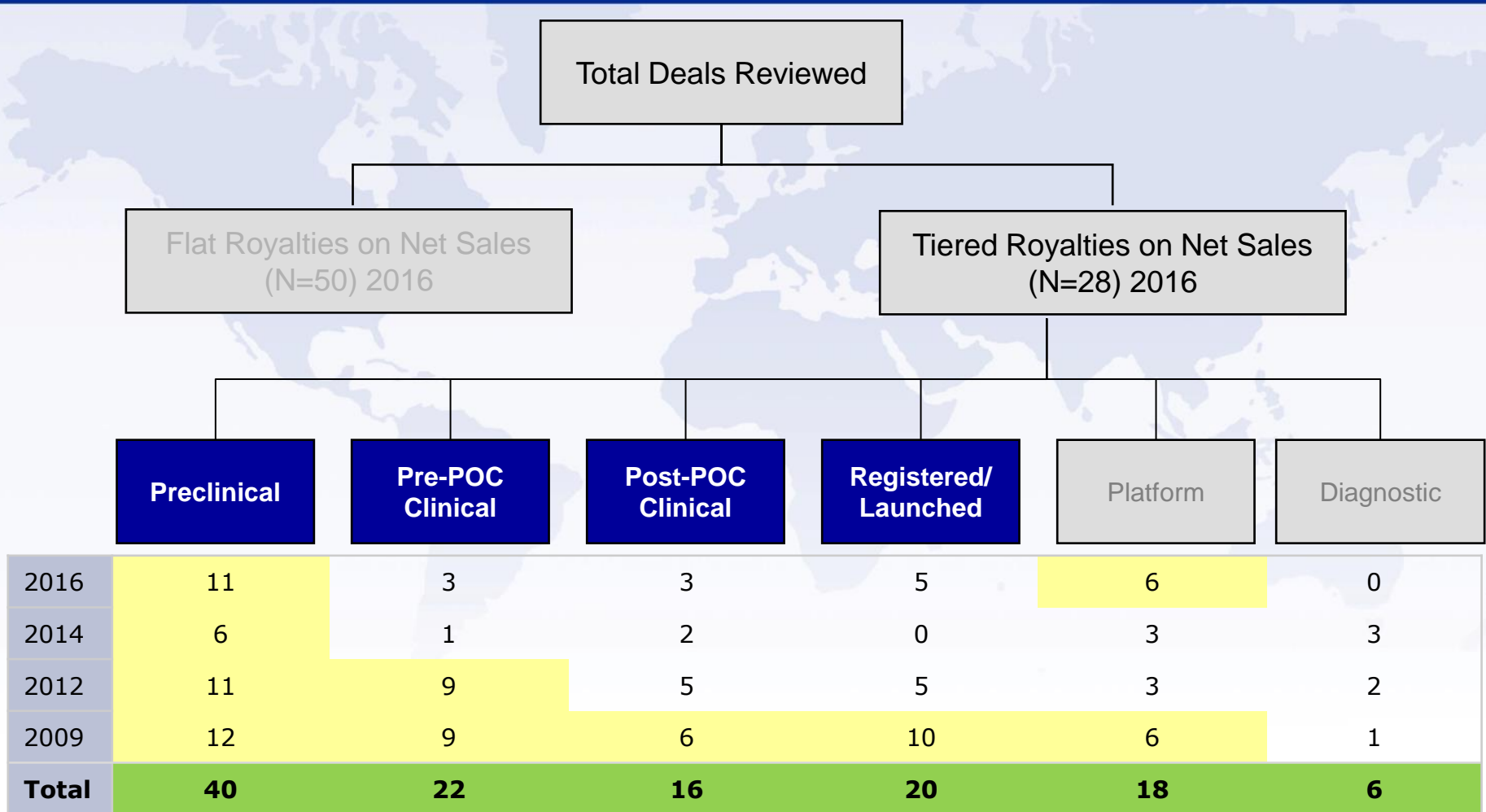


# Tiered Royalties



# Tiered Royalties

## Introduction



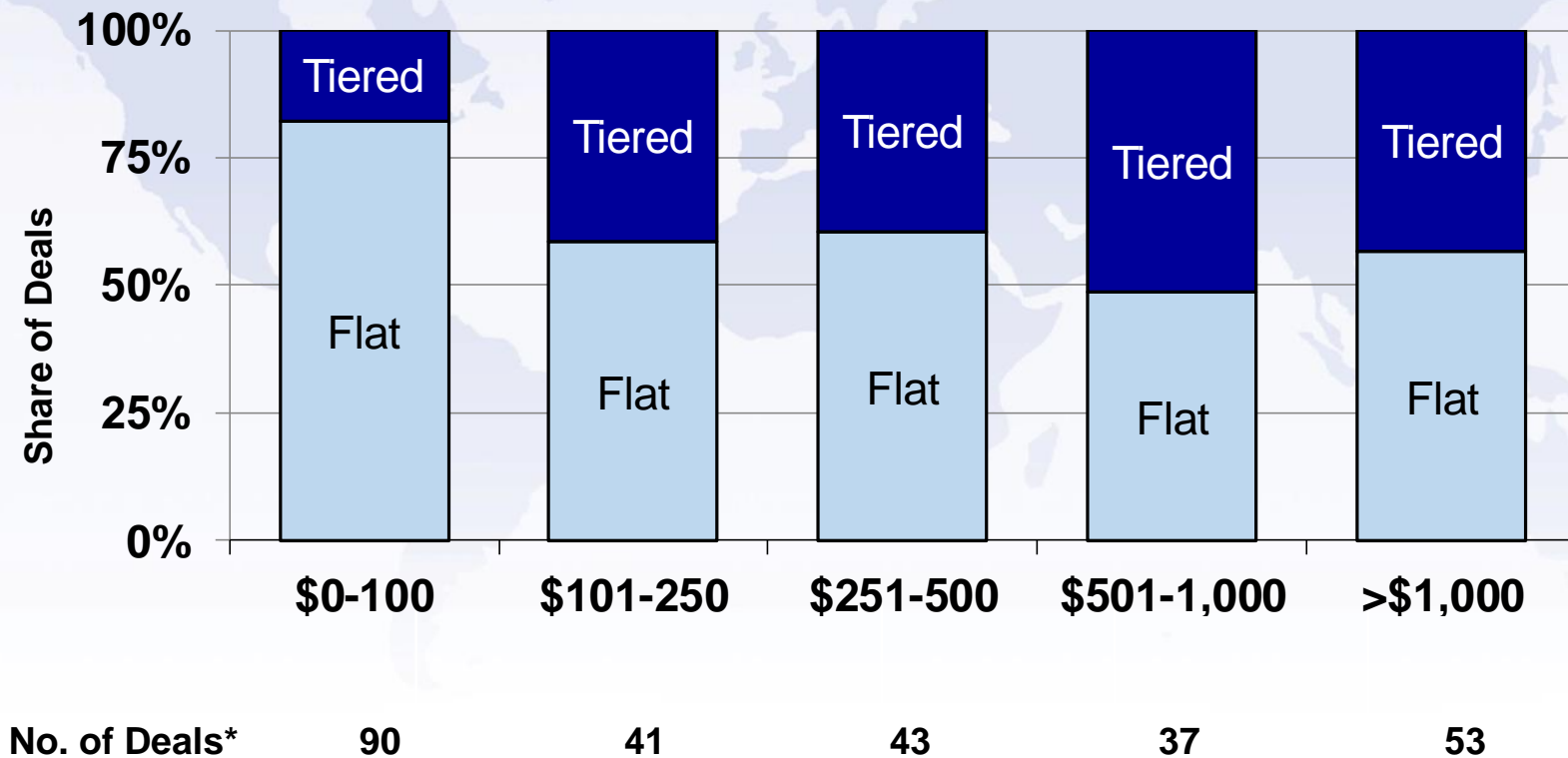
  Adequate data for analysis. Not reported when deal number  $\leq 5$



# Tiered Royalties – Combined Surveys

## *Tiered Royalties vs. Peak Sales Potential*

***There is a trend towards using tiered royalties with increasing Peak Sales Potential***



\*Includes the 213 deals where peak sales was provided from the 291 deals with either flat or tiered royalties paid on net sales.



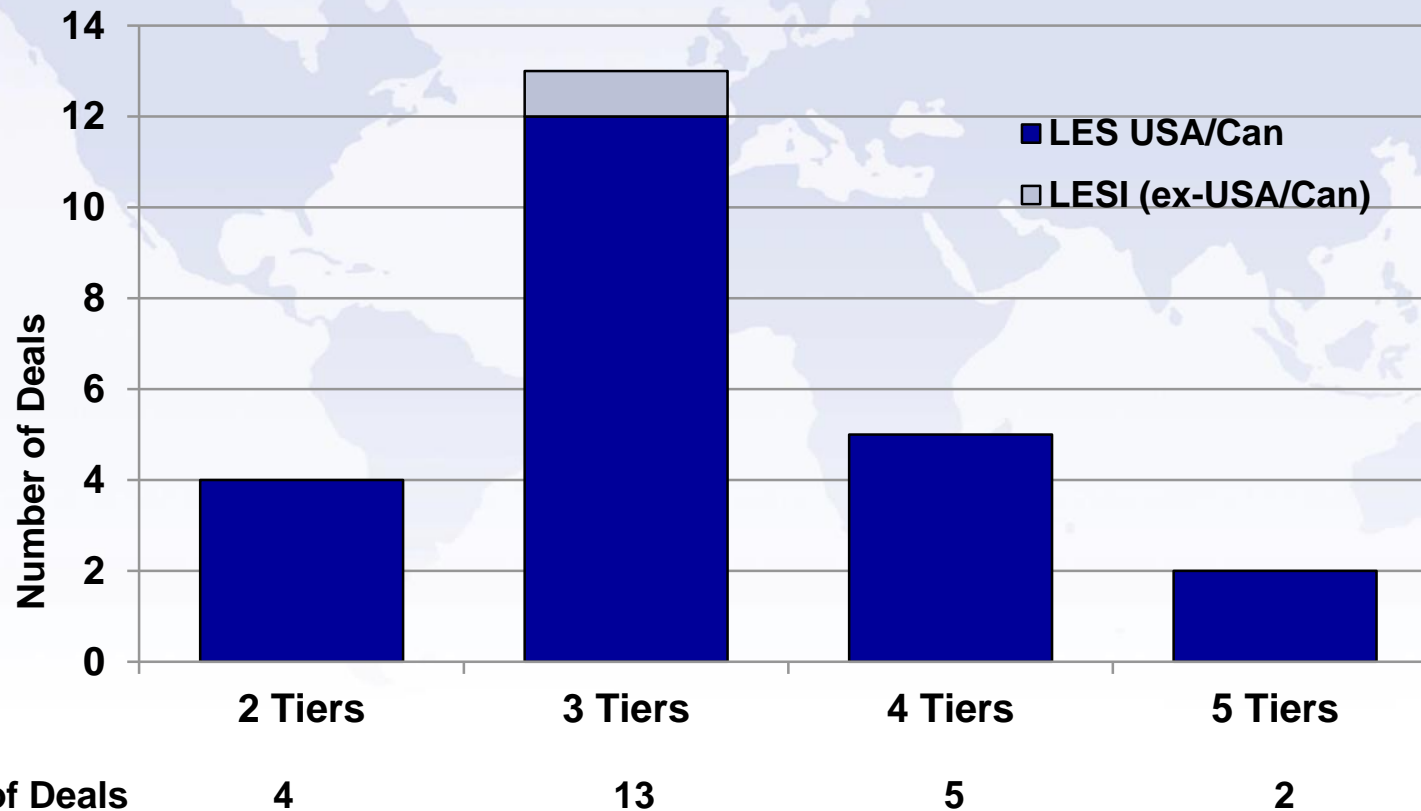
Q12: Did this deal have flat or tiered royalties?

Q12a: Are the royalties paid on:

# Tiered Royalties - 2016 Survey

## Number of Tiers

*As in earlier surveys, three royalty tiers was the most common structure—although in 2016, we saw a higher share of deals with four tiers.*



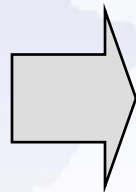
# Tiered Royalties

## *Approach to Comparing Tiers*

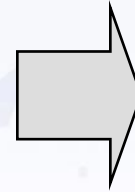
***Because different thresholds were used for changing rates, we used six standardized revenue levels to compare royalties.***

**Provided in  
Survey  
Responses**

Number of Tiers,  
Thresholds for  
Each Tier, and  
Royalty Rate at  
Each Threshold



Set Standardized  
Revenue Levels at  
\$50M, \$100M,  
\$250M, \$500M,  
\$750M, and \$1B



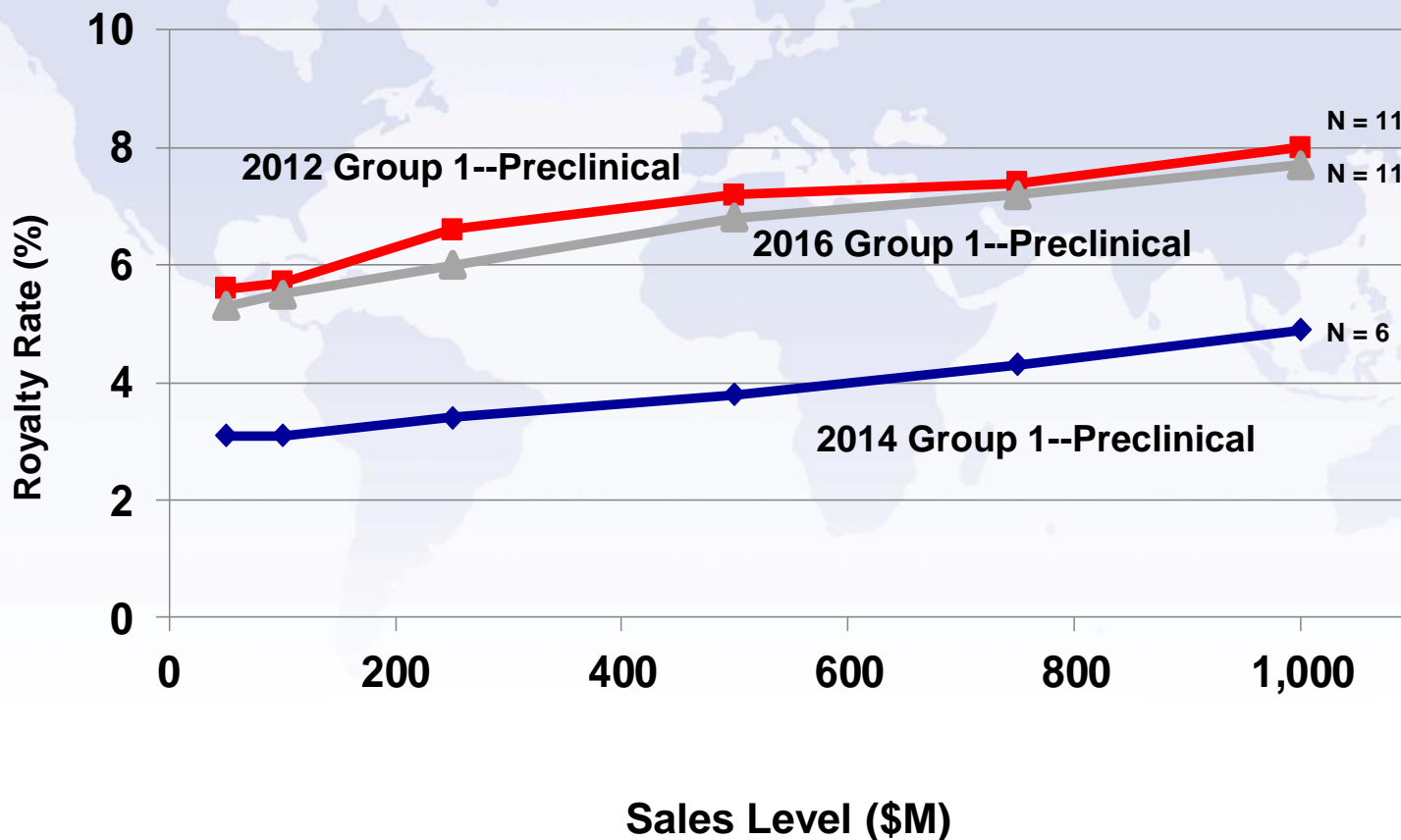
**Calculated to  
Compare Rates  
Across Deals**

Calculated the  
Royalty Level at  
Each Standardized  
Revenue Level

# Tiered Royalties – 2012-2016 Surveys

## *Tiered Royalties for Early Stage Assets*

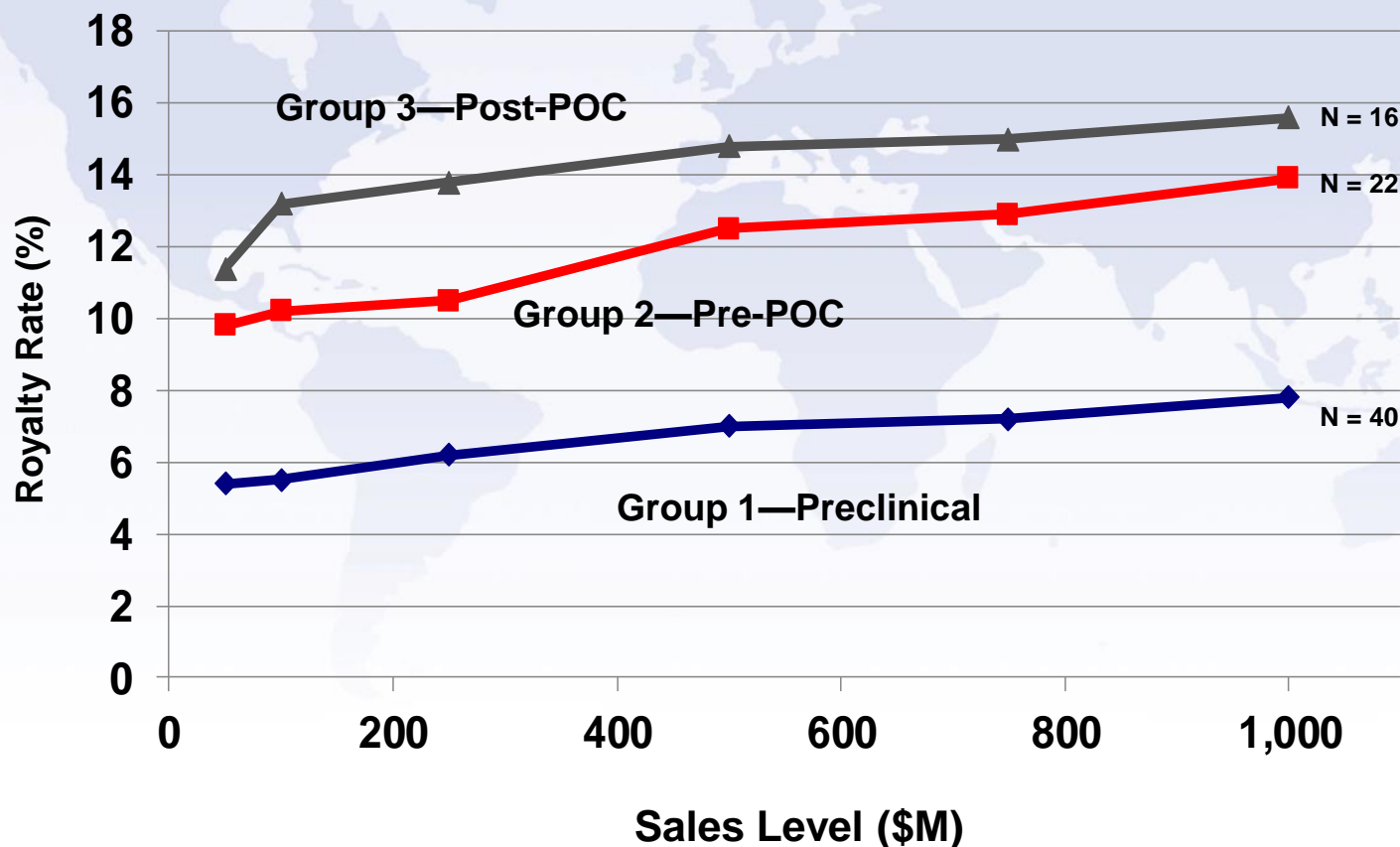
*The early stage deals in the 2012 survey had higher tiered royalty levels than those included in the 2014 and 2016 survey.*



# Tiered Royalties - Combined Surveys

## *Tiered Royalties by Stage of Development*

*The robust data set built from the four surveys supports expectations for increasing royalties as a product matures through development.*





# Tiered Royalties – 2012-2016 Surveys

## Group 1 Deal Design

***Deals with tiered royalties tended to have more complex payment designs—often including both development and sales milestones.***

 = Value Reported

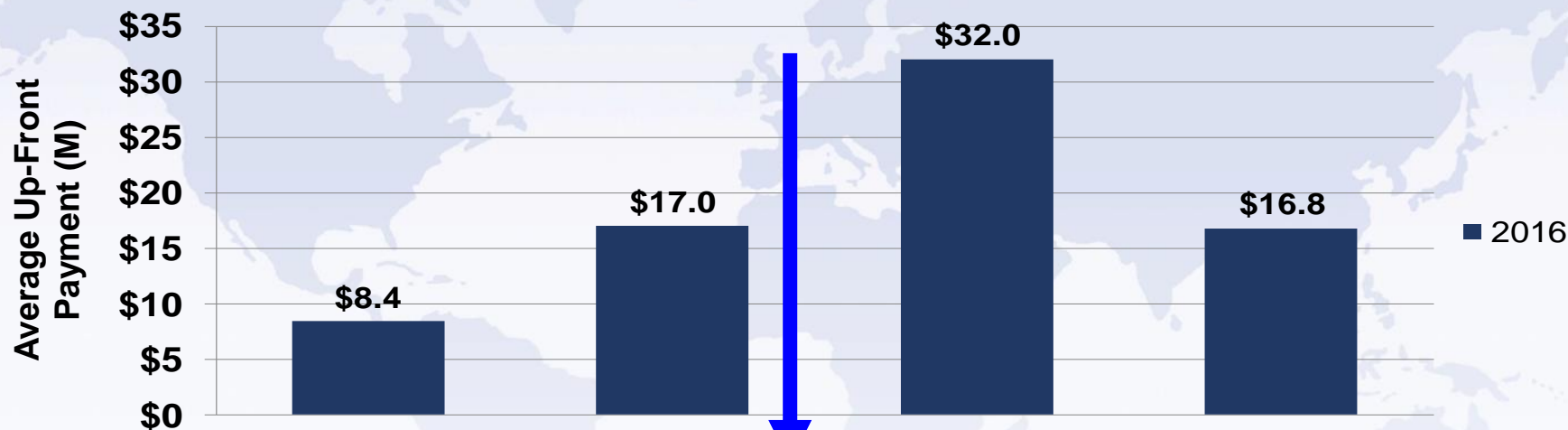
Year	Deal	Up-Front Payment	Equity Investment	Tech Access Fee	R&D Funding	Development Milestones	Sales Milestones
2012	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
2014	1						
	2						
	3						
	4						
	5						
	6						
2016	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
Percent of Deals		86%	14%	7%	25%	86%	57%



# Tiered Royalties – 2012-2016 Surveys

## Up Front Payments

*Up-front payments generally increased with development status.*



No. of Deals	36	18	15	15
Min (M)	\$15K	\$100K	\$200K	\$100K
Median (M)	\$2.0M	\$5.0M	\$8.0M	\$10.0M
Max (M)	\$94.0M	\$80.0M	\$250.0M	\$45.0M

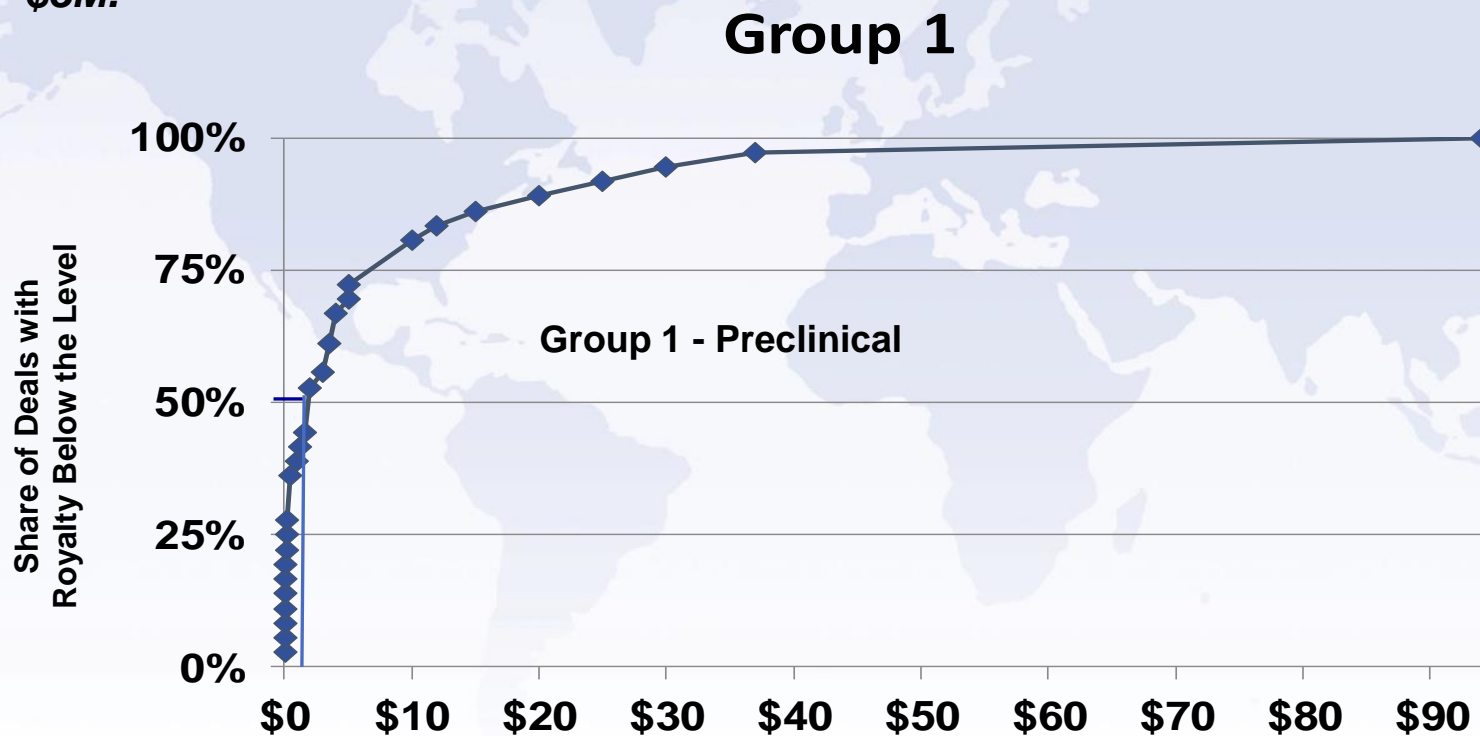
The values represent the mean for those deals where a value was reported (excludes deals where respondent said "Not Applicable" or "Don't Know").



# Tiered Royalties – Combined Surveys

## Up Front Payments (Continued)

*For pre-clinical deals with tiered royalties, the up-front payments were typically below \$3M.*



(n = 36)

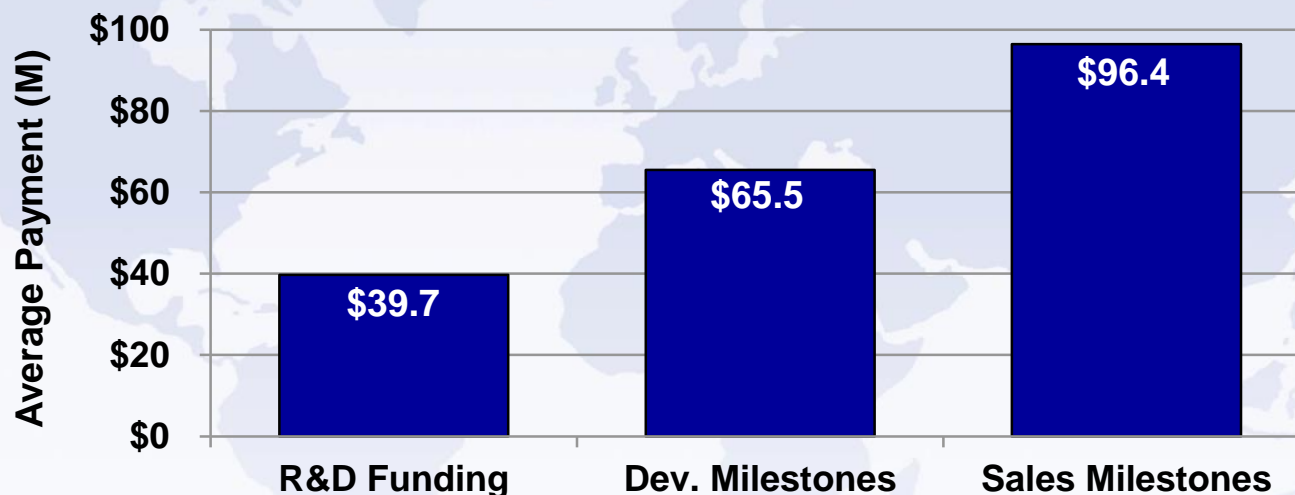
The data points only included for deals where a value was reported (excludes deals where respondent said “Not Applicable” or “Don’t Know”).



# Tiered Royalties – Combined Surveys

## *Other Payments for Group 1 Deals*

***Group 1 stage deals with tiered royalties included substantial milestones.***



No. of Deals	13	34	22
Min	\$0.3M	\$0.9M	\$0.3M
Median	\$5.0M	\$30.0M	\$40.0M
Max	\$350M	\$295M	\$325M

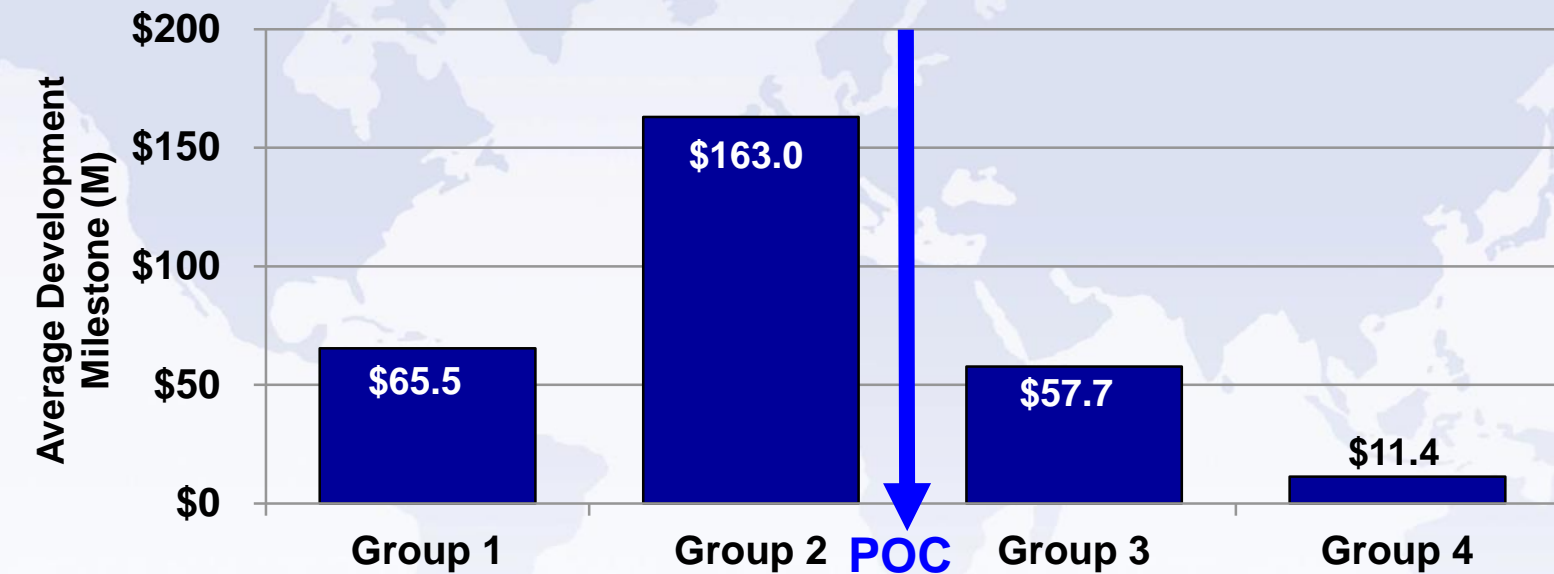
The values represent the mean for those deals where a value was reported (excludes deals where respondent said "Not Applicable" or "Don't Know").



# Tiered Royalties – Combined Surveys

## *Development Milestones vs. Stage*

*Development milestones were highest for products approaching proof of concept.*



No. of Deals	34	20	12	7
Min	\$0.9M	\$3.0M	\$0.4M	\$1.0M
Median	\$30M	\$115M	\$20M	\$10M
Max	\$295M	\$660M	\$240M	\$30M

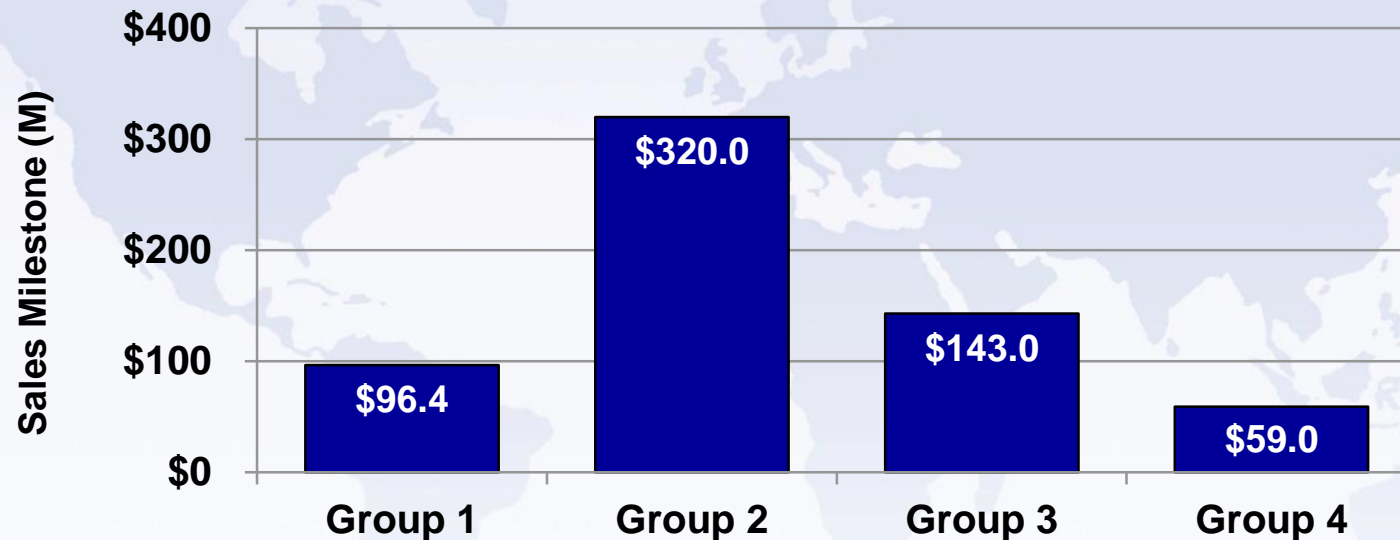
The values represent the mean for those deals where a value was reported (excludes deals where respondent said "Not Applicable" or "Don't Know").



# Tiered Royalties – Combined Surveys

## Sales Milestones vs. Stage

*Sales milestones were highest for products approaching proof of concept.*



No. of Deals	22	13	12	7
Min	\$0.3M	\$5.0M	\$1.1M	\$5.0M
Median	\$40M	\$150M	\$50M	\$70M
Max	\$325M	\$2,000M	\$850M	\$200M

The values represent the mean for those deals where a value was reported (excludes deals where respondent said "Not Applicable" or "Don't Know").



# Tiered Royalties – Combined Surveys

## Summary

*The data indicate increasing financial returns associated with later points in development.*

	Group 1— Preclinical	Group 2—Pre-POC	Group 3—Post- POC
<b>Sample Size</b>	40	22	14
<b>Average Royalty Rate</b>	~6% growing to ~8%	~10% growing to ~14%	~11% growing to ~15%
<b>Up-Front Payment</b>	\$2M	\$5M	\$8M
<b>Development Milestones</b>	\$30M	\$115M	\$20M
<b>Sales Milestones</b>	\$40M	\$150M	\$50M

As reflected on earlier pages, the number of respondents for each deal components varied.

Note: For Up-Front Payment, Development Milestones, and Sales Milestones, the values reported are approximately the medians. In previous reports, a mean has been provided in this table.





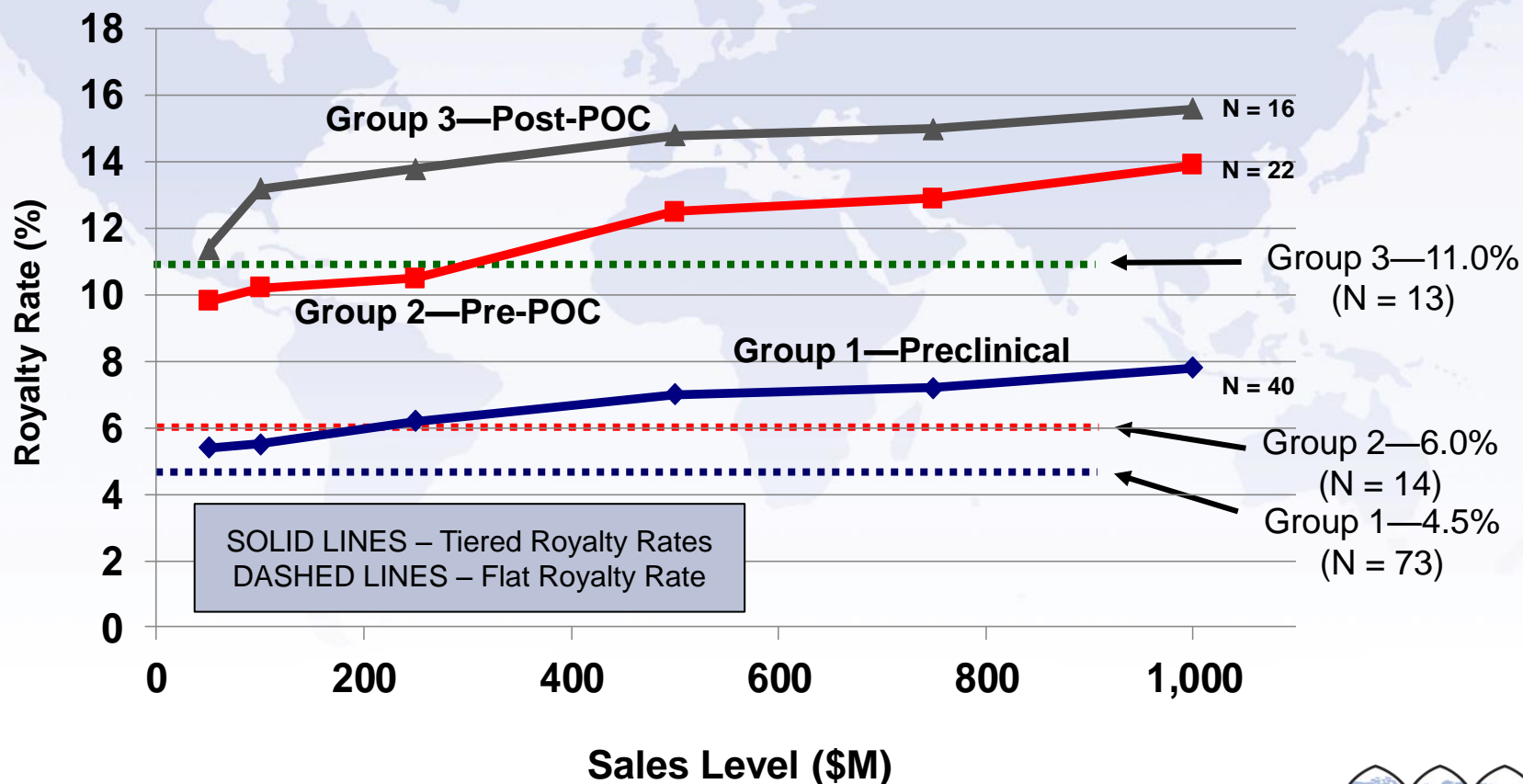
# Flat vs. Tiered Royalties



# Comparison of Flat and Tiered Royalties

## Combined Surveys

*The robust data set built from the three surveys supports expectations for increasing royalties as a product matures through development.*



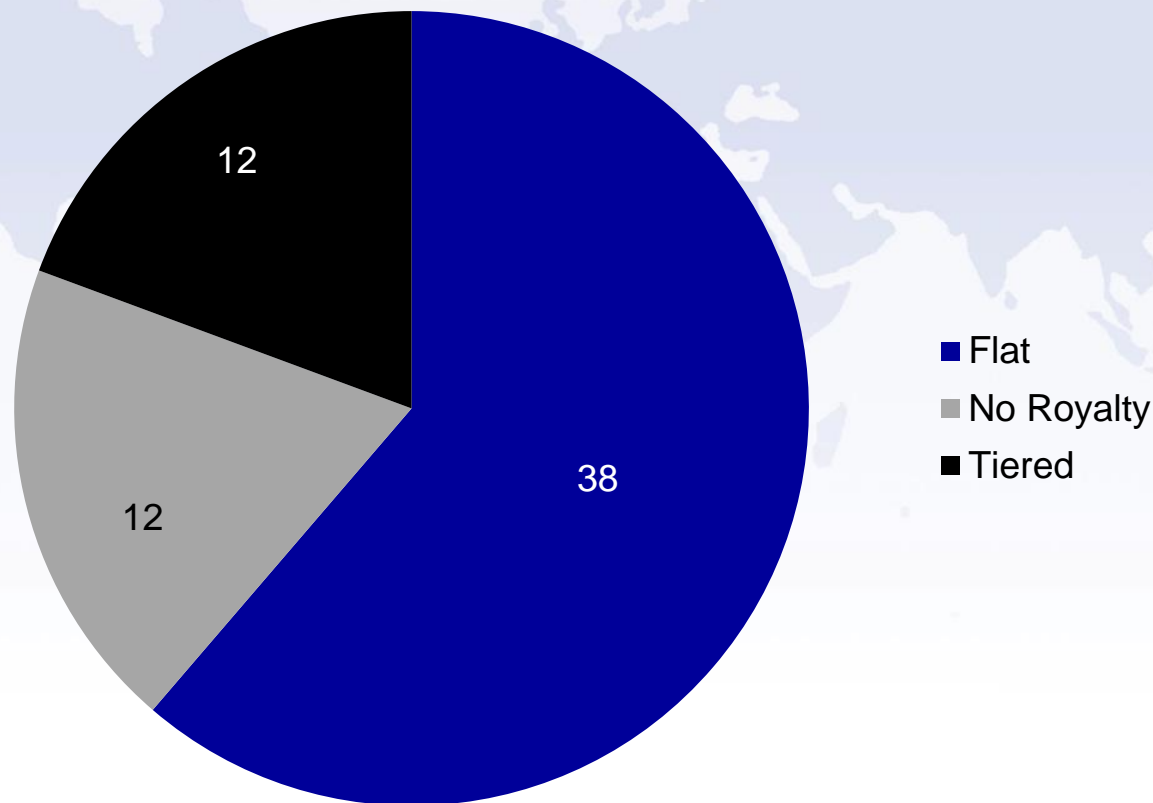
# Profile of Diagnostics Deals



# Flat Royalties - Combined Surveys

## *Diagnostics Deal Design*

***A high share of diagnostic deals were based on a single payment with no future royalty component—and few used a tiered royalty structure.***



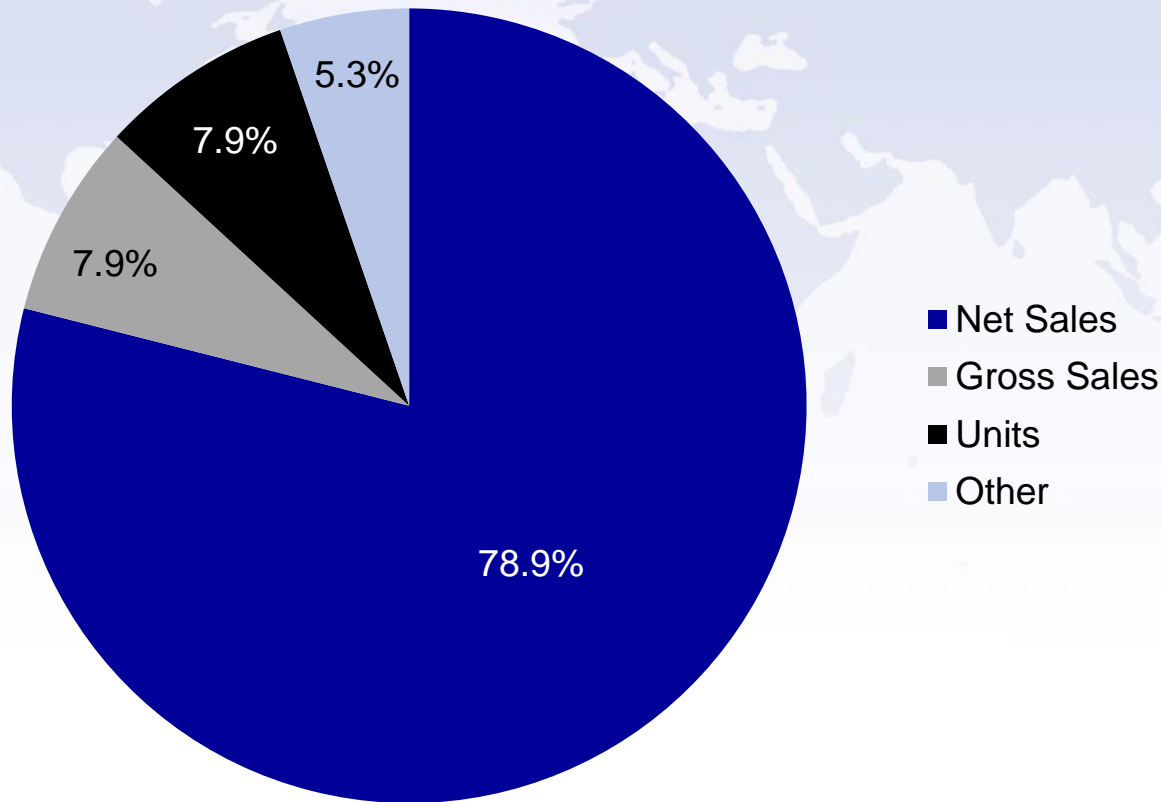
(n = 62 deals, includes gross sales)

# Flat Royalties - Combined Surveys

## *Diagnostics Deal Design*

***Within diagnostic deals with a flat royalty component, approximately 80% are paid on net sales.***

**Diagnostic Deals with a Flat Royalty**

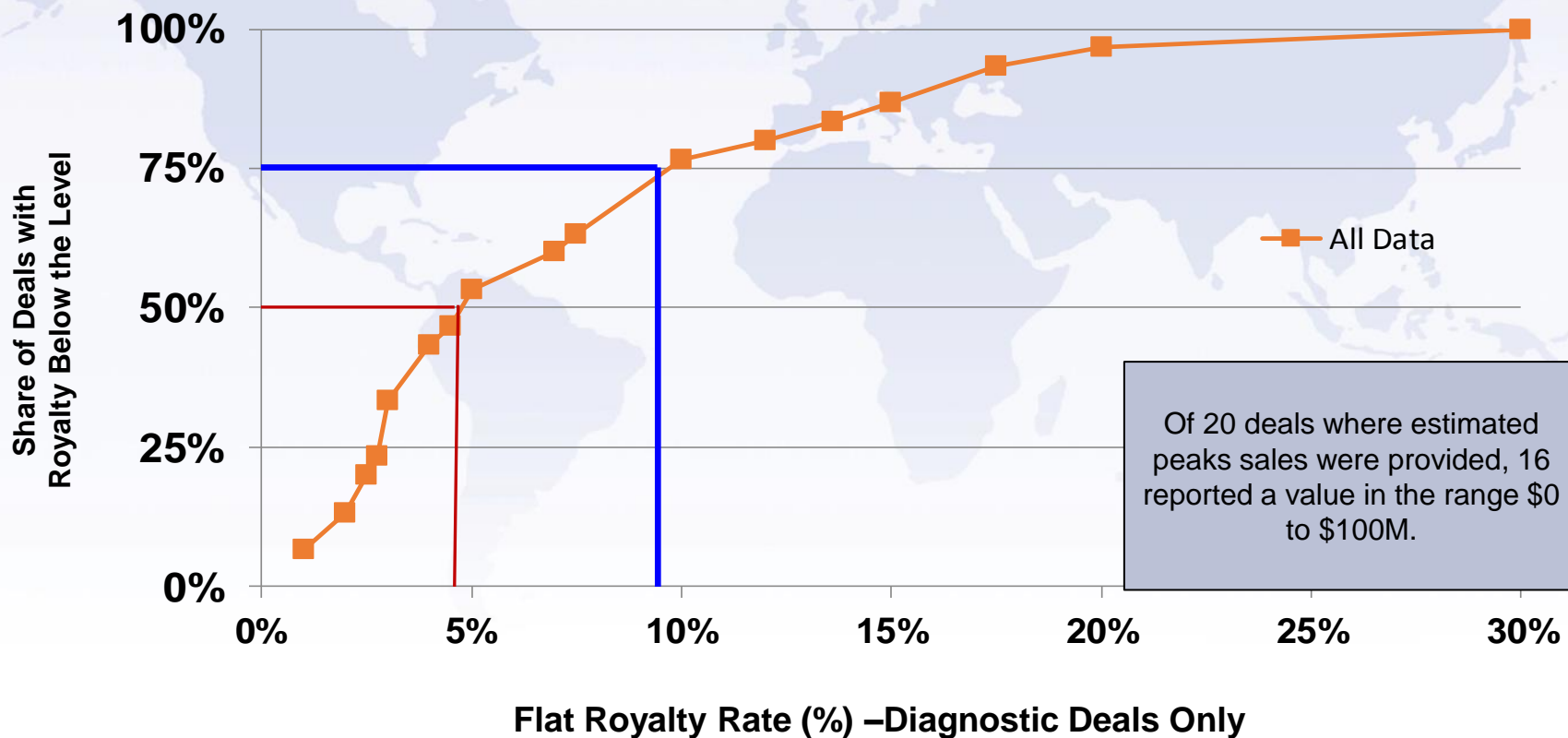


(n = 38 deals)

# Flat Royalties - Combined Surveys

## *Distribution of Flat Royalty Rates (Diagnostics)*

***While the rate falls below 5% for half of the diagnostic deals with flat royalties, a quarter of the deals have royalties above 9%.***

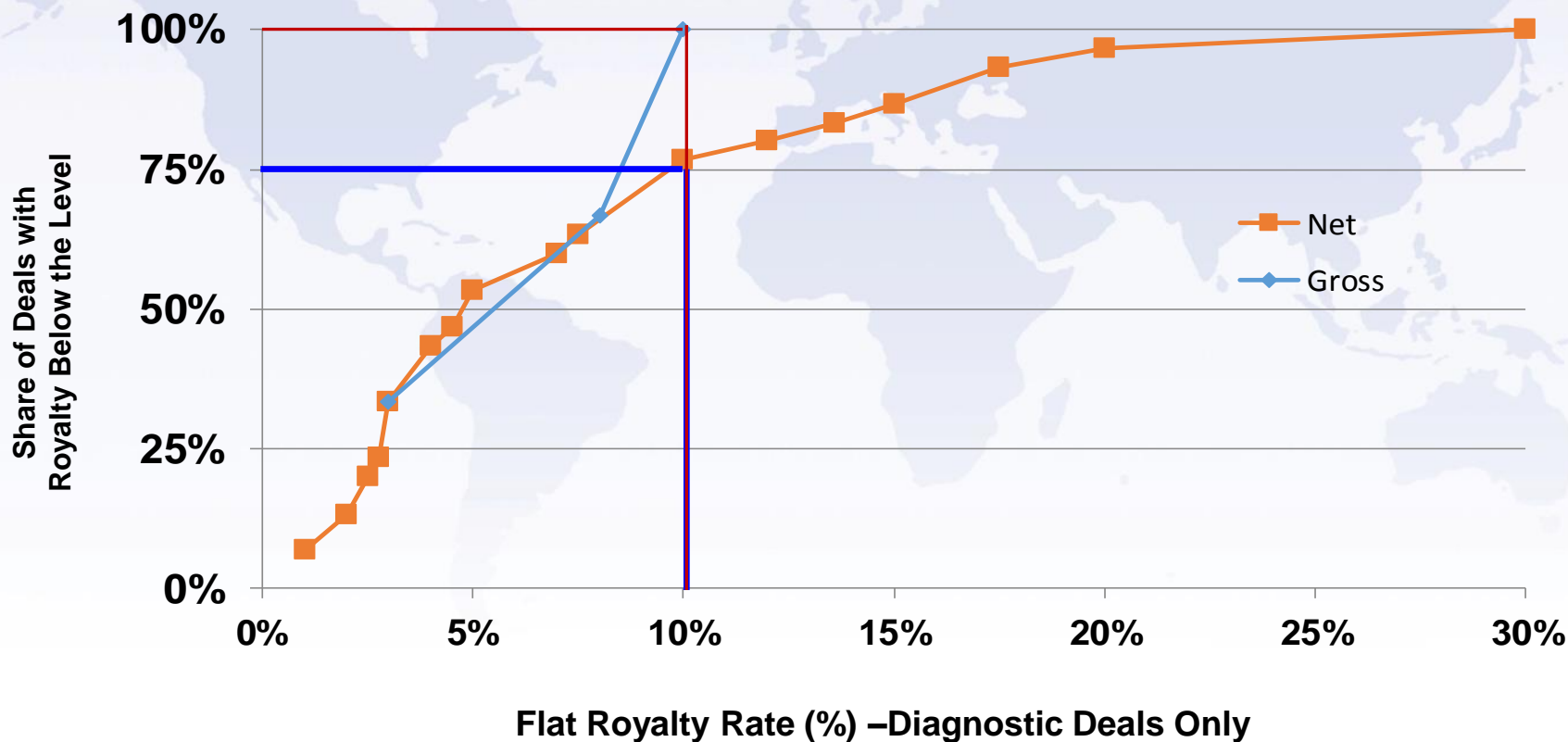


(n = 30 deals)

# Flat Royalties - Combined Surveys

## *Distribution of Flat Royalty Rates (Diagnostics)*

**While a quarter of royalty rates on net sales are above ~10%, all royalty rates on gross sales are below 10%.**



(n = 30 deals)






















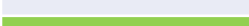
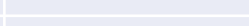
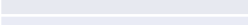














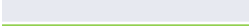


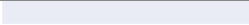
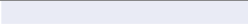






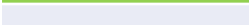



# Flat Royalties - Combined Surveys

## *Diagnostics Deal Design (flat royalty on net)*

***With less frequent inclusion of milestone payments, diagnostic licensees typically rely on the modest up-front payment and future royalties.***

 = Value Reported

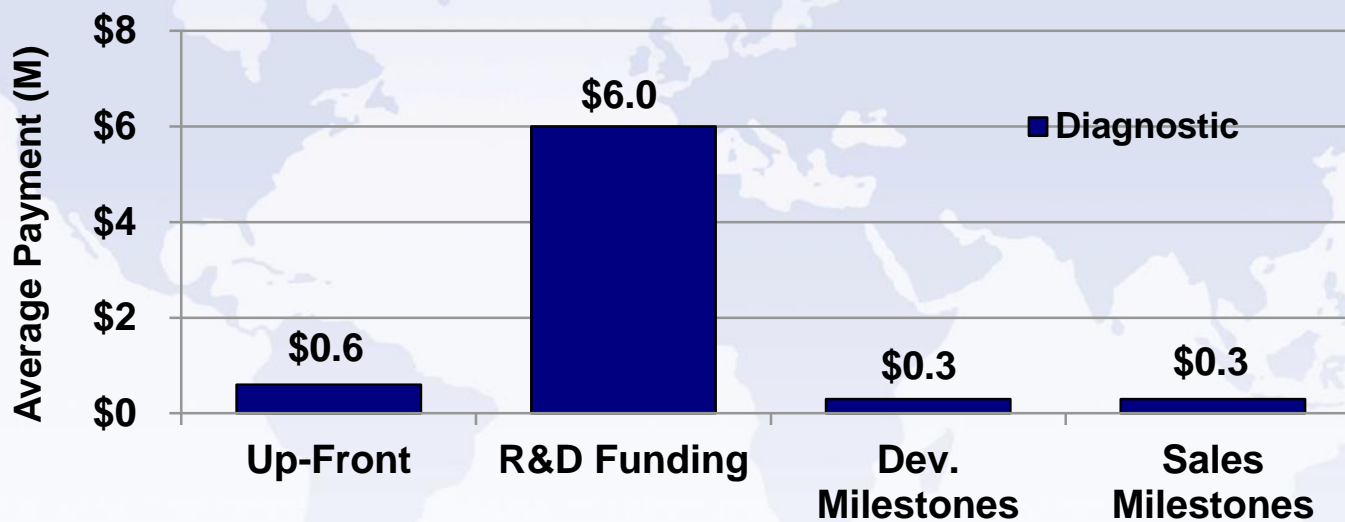
Year	Deal	Up-Front Payment	Equity Investment	Tech Access Fee	R&D Funding	Development Milestones	Sales Milestones
2009	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
2012	1						
	2						
	3						
	4						
	5						
	6						
2014	1						
	2						
	3						
	4						
	5						
	6						
2016	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
Percent of Deals		70%	10%	7%	23%	4%	23%



# Flat Royalties - Combined Surveys

## *Other Payments- Diag. (flat royalty on net)*

*In diagnostic deals, licensees occasionally provide some R&D funding, but the licensor is dependent on royalties for meaningful returns.*



No. of Deals	21	7	12	7
Min	\$0.0K	\$0.0K	\$0.0K	\$0.0K
Median	\$20K	\$2,000K	\$90K	\$100K
Max	\$12M	\$20M	\$1M	\$2M

The values represent the mean for those deals where a value was reported (excludes deals where respondent said "Not Applicable" or "Don't Know").



# Royalty Rates

## *Summary of Observations*

### **General Observations**

- There is a high level of consistency between this year's and earlier surveys.
- The expanded data set provides greater refinement on observations concerning drivers of deal values and offers the opportunity for multiple additional data cuts.
- Because of the spread in values, there is a strong caution regarding drawing guidance from average (mean) values.

### **Deals for Diagnostics**

- The simple deal structures (often excluding royalty payments) for diagnostics is consistent with the lower revenue forecasts of the products included in the survey.
- A “longer tail” of higher value royalty levels for those diagnostics deals with royalty payments leaves much of the risk with the licensor but recognizes the licensor's need to recover investments on relatively low revenues.



# Royalty Rates

## *Summary of Observations*

### **Flat and Tiered Royalties**

- The average flat royalty rate for the earliest stage product was approximately 4%.
- Three tiers is still the most common structure amongst tiered royalty deals, however in 2016 the use of four tiers increased.

### **Value Creation**

- As anticipated product revenue increases, tiered royalty structures are more often applied.
- Substantially higher term values are observed for tiered royalty deals and for deals associated with later stage assets.



# Valuation



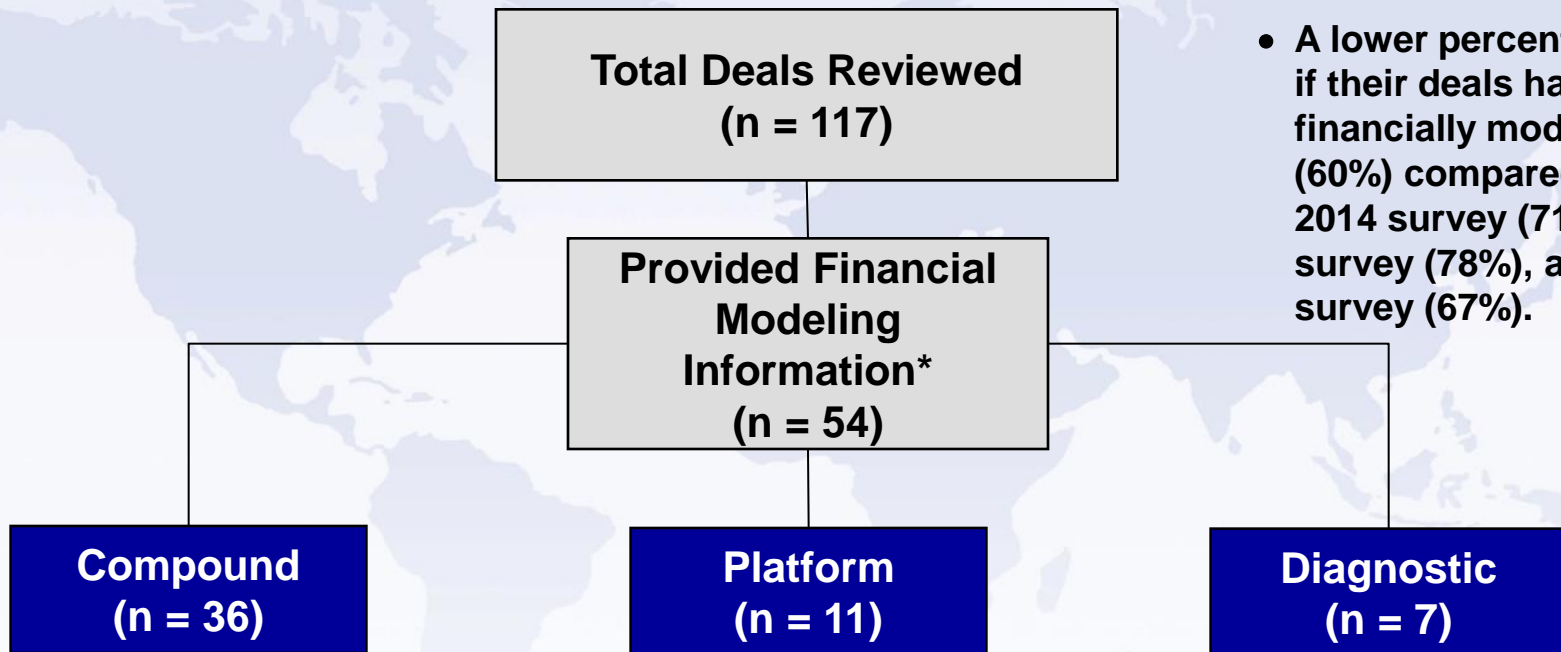
# Table of Contents

Introduction	87
Financial Modeling of the Deal Value	89
Deals Not Financially Modeled	95
By Type of Deal	96
Types of Valuation Methods Used	97
Primary Valuation Methods Used	106
Methods Summary	111
Discount Rates	113
Valuation Prior to Negotiations vs. Final Deal	120
Actual Deal Splits	122
Upfront, Milestone, and Other Payments	123



# Valuation (2016 Survey)

## Introduction



- A lower percentage knew if their deals had been financially modelled (60%) compared with the 2014 survey (71%), 2012 survey (78%), and 2009 survey (67%).

Q24: As part of deal process, did you (or someone at your company) financially model the value of the deal?

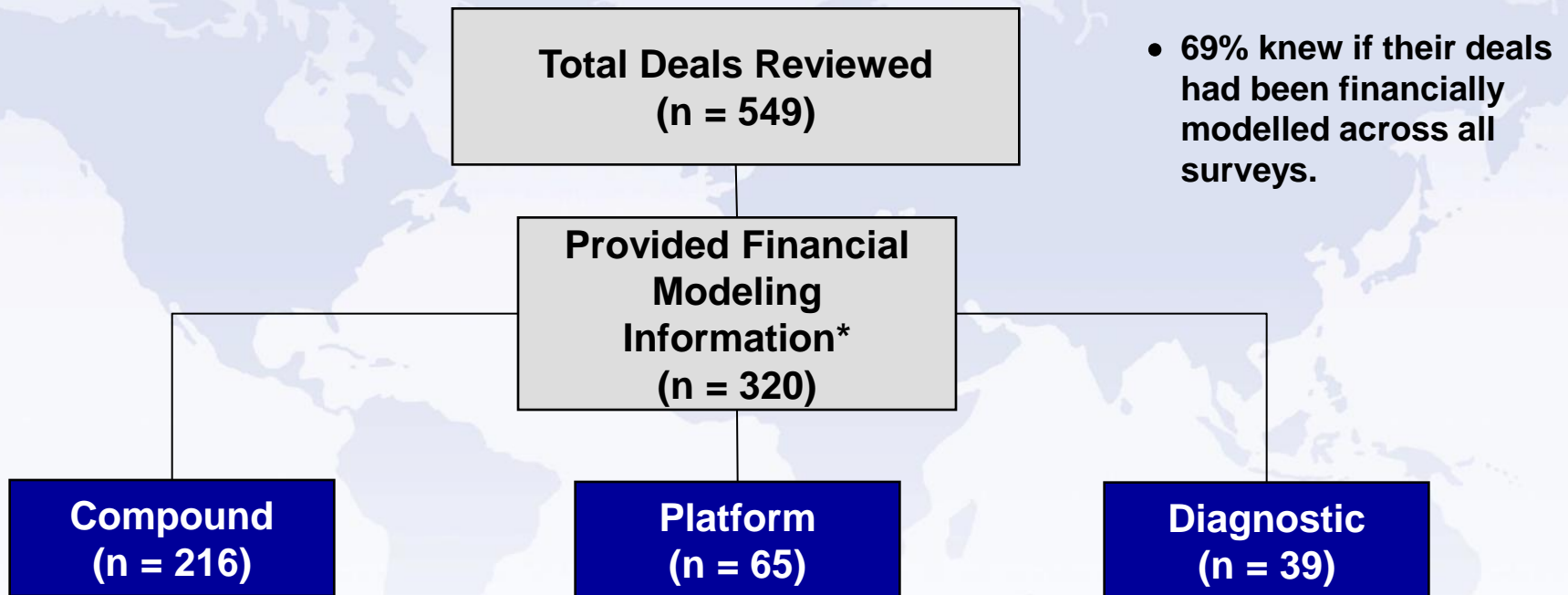
\* Responded Yes or No to Q24 crossed with type of deal. Excludes "Other" types of deal.





# Valuation (Combined Surveys)

## *Introduction*



Q24: As part of deal process, did you (or someone at your company) financially model the value of the deal?

\* Responded Yes or No to Q24 crossed with type of deal. Excludes "Other" types of deal.



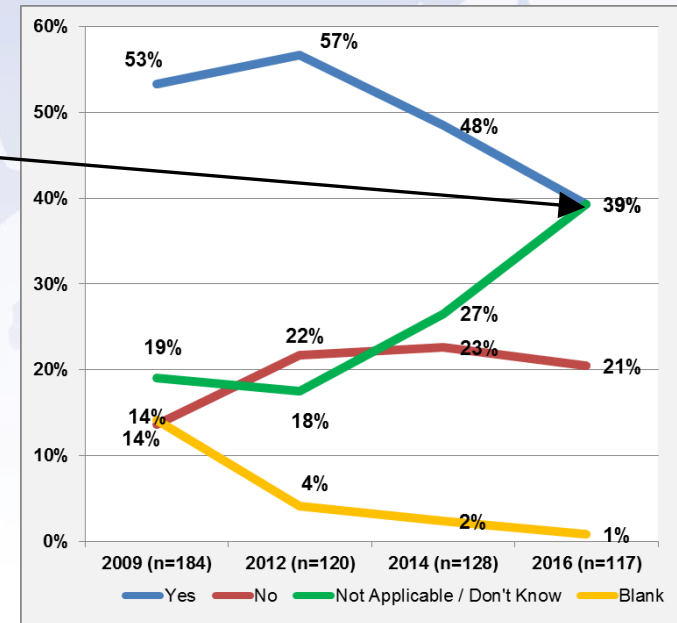
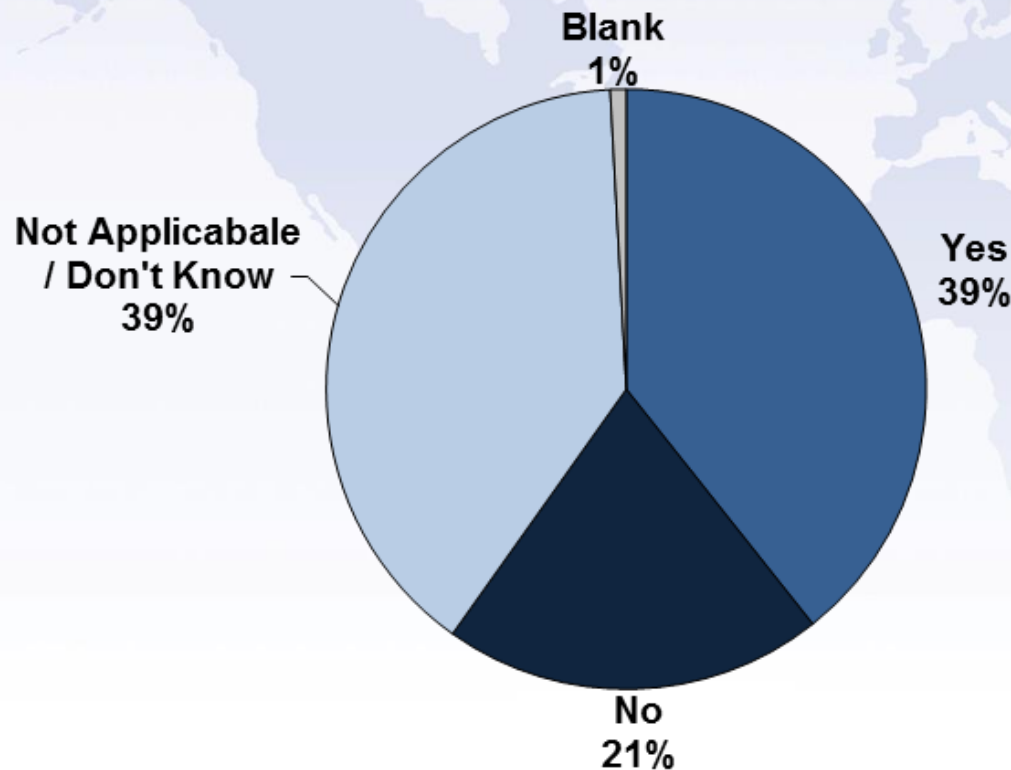
# Valuation (2016 Survey)

## Financial Modeling of the Deal Value

**Less than half of the 117 deals submitted confirmed financial modeling performed.**

(n = 117)

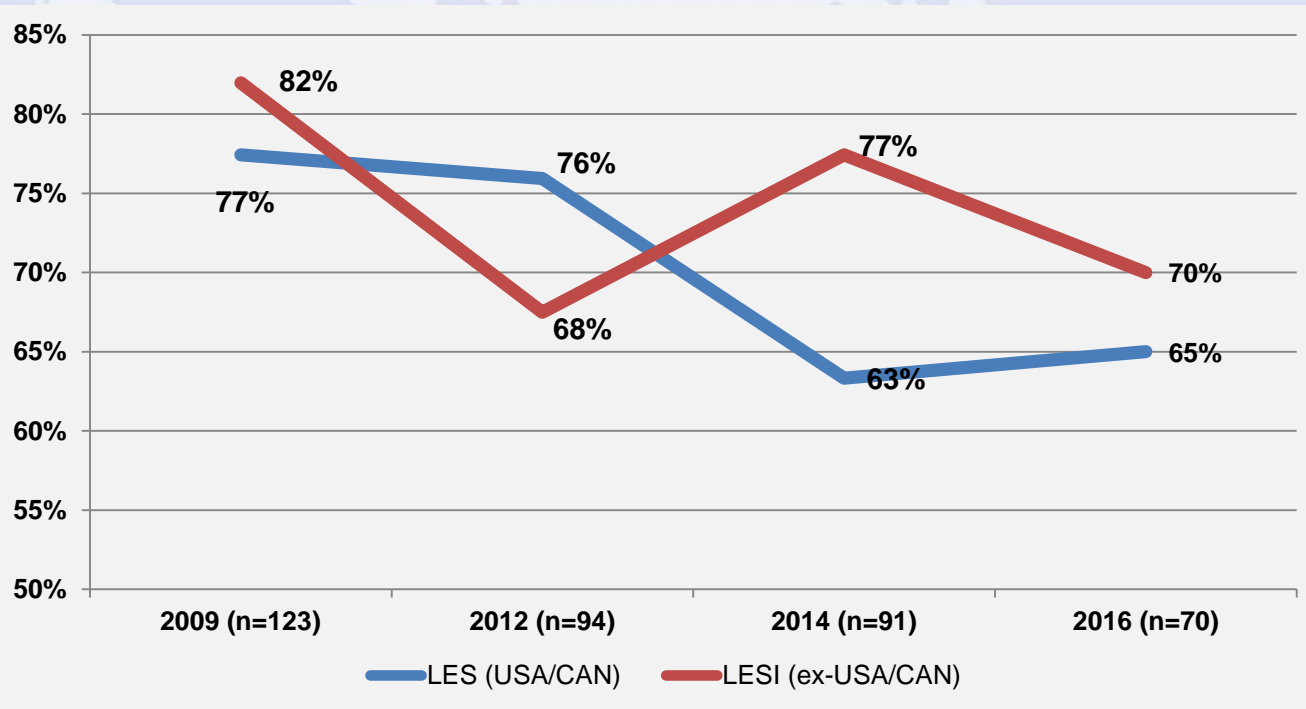
- % of YES responses decreased below 2014, 2012, and 2009 levels, while Not Applicable/Don't Know responses increased.



# Valuation (Comparison of Surveys)

## Financial Modeling of the Deal Value

***LESI (ex-USA/CAN) respondents modeled deal value more often than LES (USA/CAN) respondents.***



- Only 10 of the 70 responses in 2016 were LESI (ex-USA/CAN) responses.
- LESI (ex-USA/CAN) weighted average over the last 4 surveys has been 76%.
- LES (USA/CAN) weighted average over the last 4 surveys has been 70%.

Q24: As part of deal process, did you (or someone at your company) financially model the value of the deal?

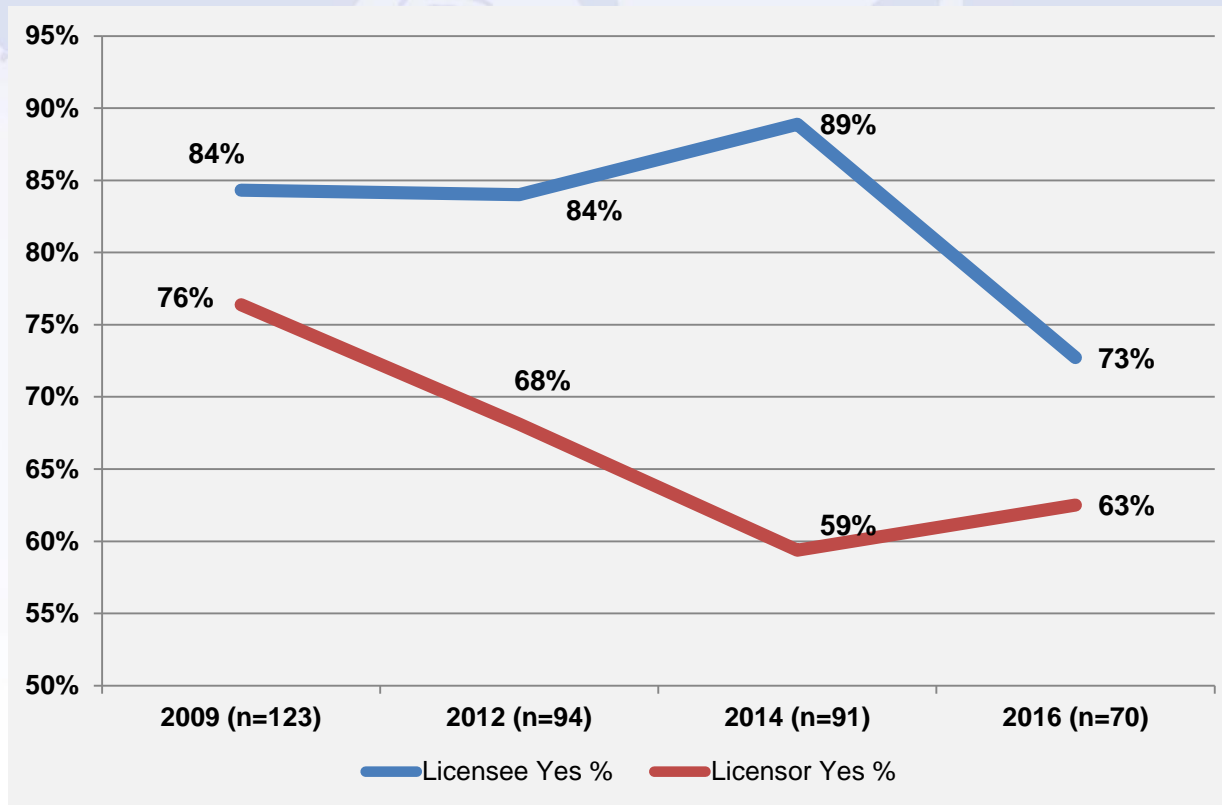
\*Includes only deals with YES/NO response to Question 24.



# Valuation (Comparison of Surveys)

## Financial Modeling of the Deal Value

*Licensees financially model deal value much more frequently than licensors.*



- While licensees still financially model more frequently than licensors, the gap narrowed substantially in 2016.
- Licensee weighted average over the last 4 surveys has been 83%.
- Licensor weighted average over the last 4 surveys has been 67%.

Q24: As part of deal process, did you (or someone at your company) financially model the value of the deal?

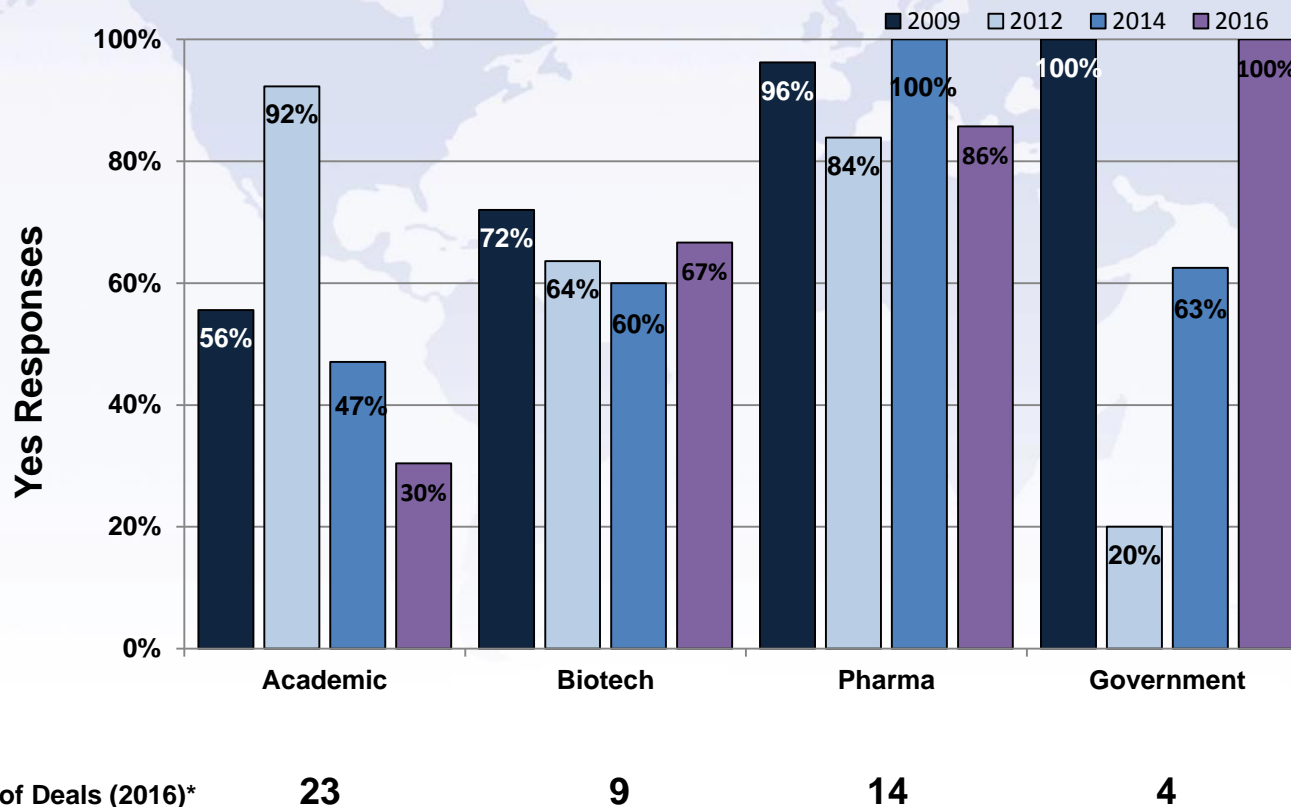
\*Includes only deals with YES/NO response to Question 24.



# Valuation (Comparison of Surveys)

## Financial Modeling of the Deal Value

***Deals submitted by biotech and pharma companies were financially modeled more frequently than deals submitted by academic institutions.***



- ***In the past two surveys, almost half of the responses were from academic institutions (compared with less than 20% in the 2009 and 2012 surveys).***
- ***Pharma deals are modeled more frequently than biotech deals (92% vs. 67%).***

Q24: As part of deal process, did you (or someone at your company) financially model the value of the deal?

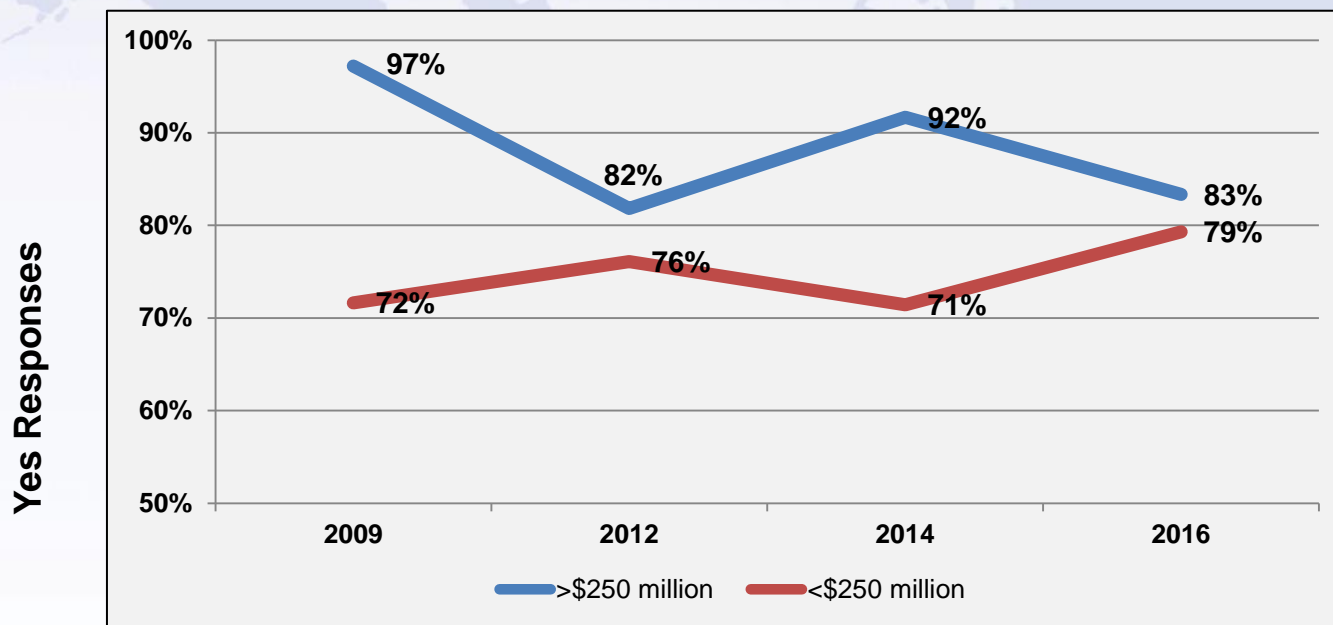
\*Includes only deals with YES/NO response to Question 24 crossed with type of institution shown.



# Valuation (Comparison of Surveys)

## Financial Modeling of the Deal Value

**Operating companies with more than \$250 million in revenue modeled deals more frequently than operating companies with less than \$250 million in revenue.**



- **Weighted average of 84% for operating companies with sales of MORE THAN \$250 million over the last 4 surveys.**
- **Weighted average of 74% for operating companies with sales of LESS THAN \$250 million over the last 4 surveys.**

>\$250M (n=)	36	22	12	12
<\$250M (n=)	67	46	42	29

Q24: As part of deal process, did you (or someone at your company) financially model the value of the deal?

\*Includes only deals with YES/NO response to Question 24 crossed with annual sales revenue.

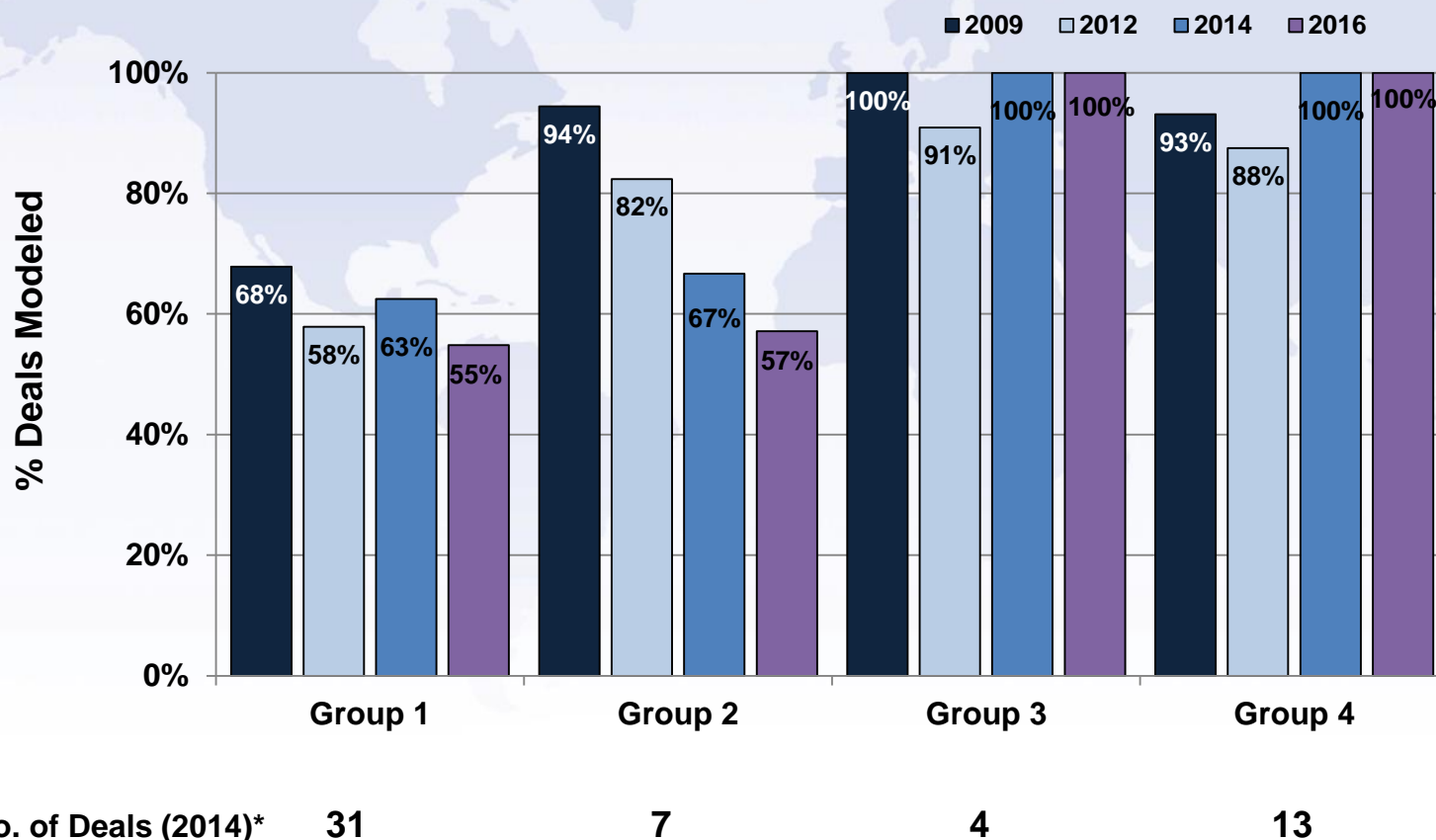




# Valuation (Comparison of Surveys)

## Financial Modeling of the Deal Value

**For those responses indicating if financial modeling was conducted, early-stage deals (Group 1) were less likely to be financially modeled.**



- **Group 2 deals declined from for the third consecutive time. However, there were only 7 Group 2 deals, or 13% of the deals.**
- **82% of platform deals were financially modeled, substantially less than in the previous three surveys.**

Q24: As part of deal process, did you (or someone at your company) financially model the value of the deal?

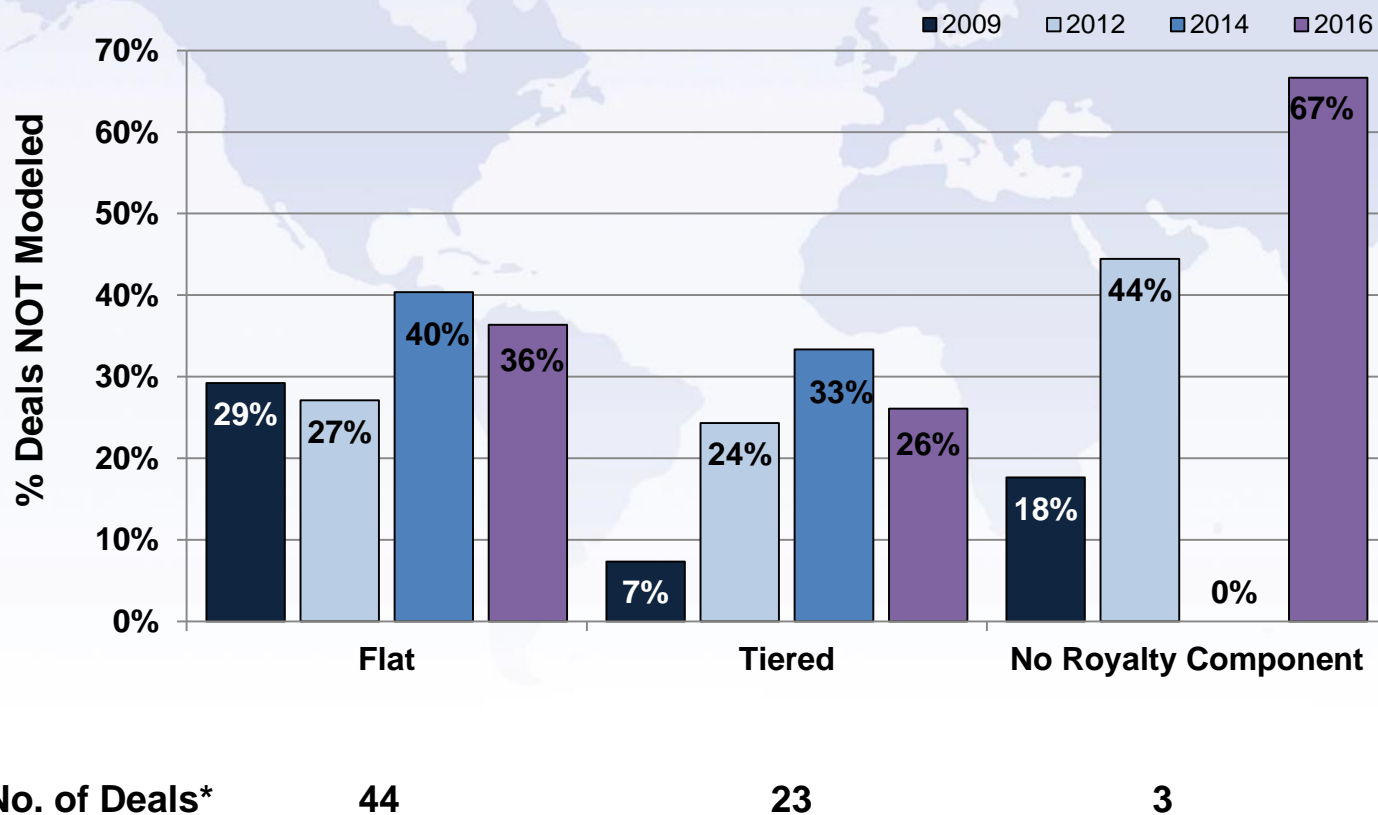
Includes only deals with YES/NO response to Question 24 crossed with stage of development (excludes diagnostic deals)



# Valuation (Comparison of Surveys)

## Deals Not Financially Modeled

**Deals with flat and tiered royalty rates financially modeled less than in the 2014 survey. Only 3 deals with no royalty component.**



- **Half of 2016 flat royalty rate deals that were not financially modeled involved royalty rates of 4% or less (less than 2014, 2012, and 2009 surveys).**
- **The majority of tiered royalty rate deals that were not financially modeled involved royalty rates of at least 6% (across all 4 surveys).**

Q24: As part of deal process, did you (or someone at your company) financially model the value of the deal?

\*Includes only deals with YES/NO response to Question 24 crossed with royalty rate structure

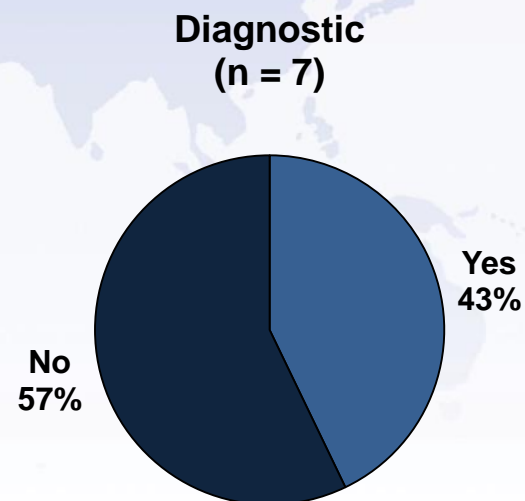
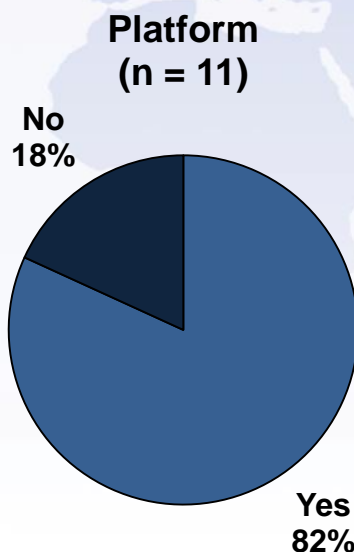
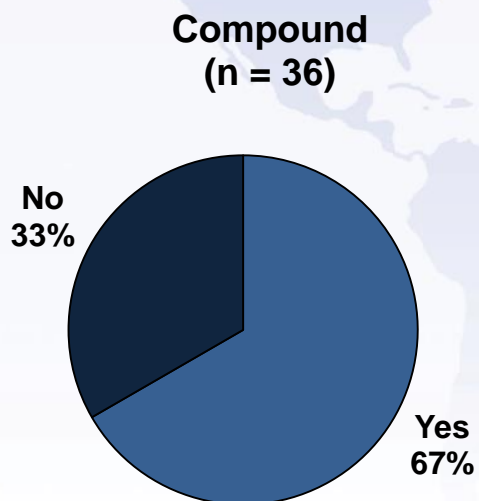




# Valuation (2016 Survey)

## By Type of Deal

***Compound and diagnostic deals were financially modeled less frequently than in any of the previous three surveys, while platform deals were financially modeled more frequently than in any of the previous three surveys.***



Q24: As part of deal process, did you (or someone at your company) financially model the value of the deal?

\*Includes YES/NO responses to Question 24 crossed with the type of deal.

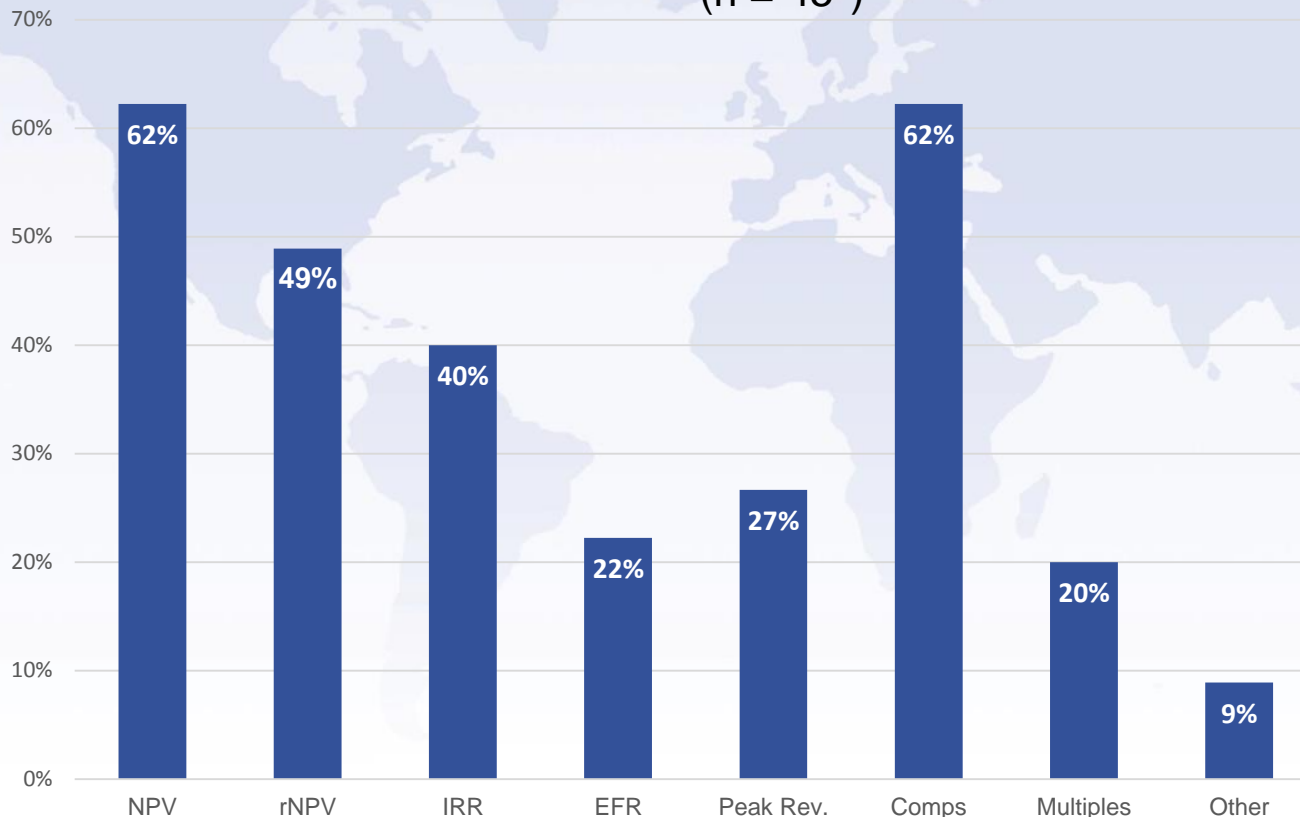


# Valuation (2016 Survey)

## Types of Valuation Methods Used

**A variety of valuation methods are employed.**

(n = 45\*)



- **Comps used as frequently as NPV.**
- **76% of deals modeled with some form of NPV analysis (NPV, rNPV). (Up from 67% in 2014 and 73% in 2012.)**

Q25: Please select ALL methods used: NPV, rNPV, IRR, EFR, Peak Rev. or Inc., Comparables, Multiples, or Other.

\*Includes deals with responses to Question 25 (excluding DNK/NA) crossed with YES responses to Question 24 (excluding DNK/NA)

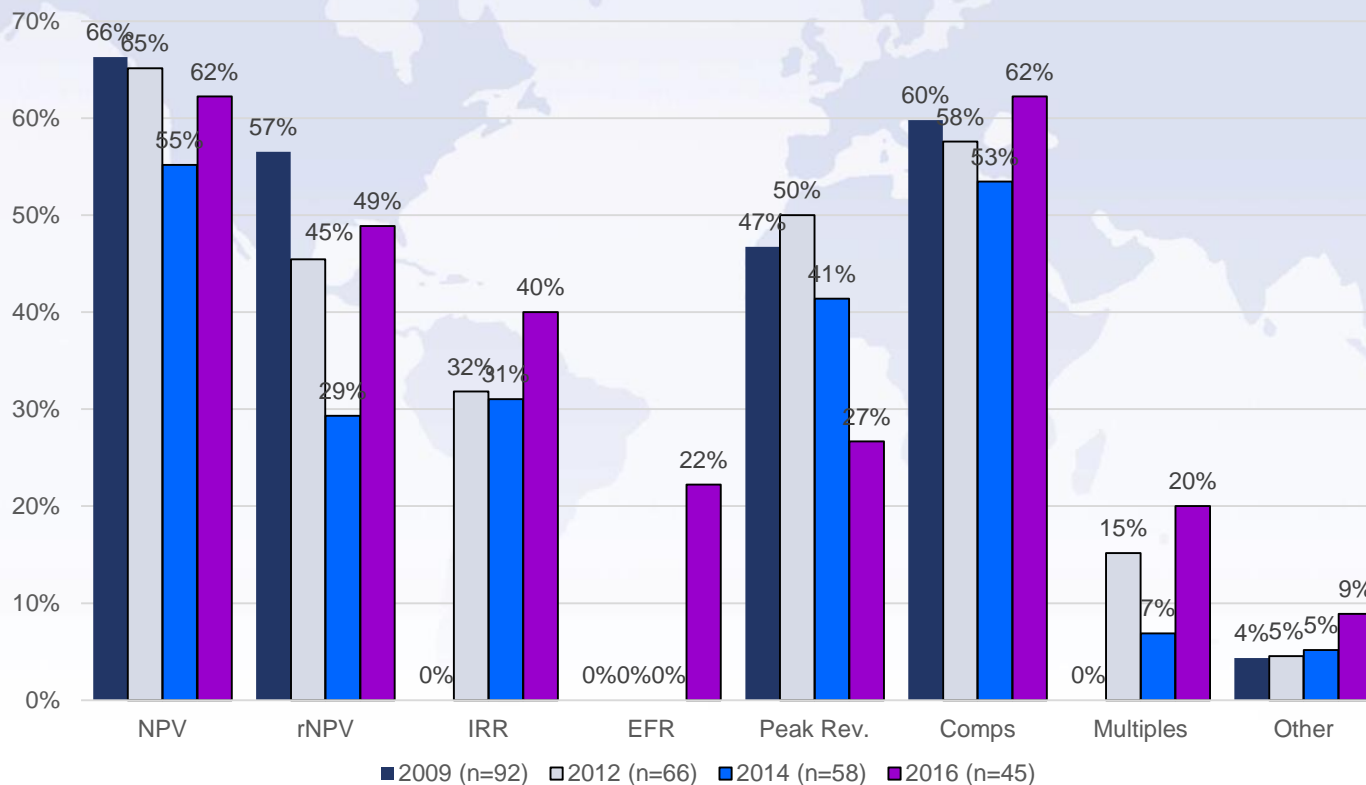


# Valuation (Comparison of Surveys)

## Types of Valuation Methods Used

**Use of all types of valuation methods, except Peak Rev., increased from 2014 survey.**

(n = 45\*)



- **Effective Royalty Rate included for the first time.**
- **rNPV response rate rebounded after substantial decline in 2014 survey.**
- **Note: IRR and Multiples were not offered as responses in the 2009 survey.**

Q25: Please select ALL methods used: NPV, rNPV, IRR, EFR, Peak Rev. or Inc., Comparables, Multiples, or Other.

\*Includes deals with responses to Question 25 (excluding DNK/NA) crossed with YES responses to Question 24 (excluding DNK/NA)

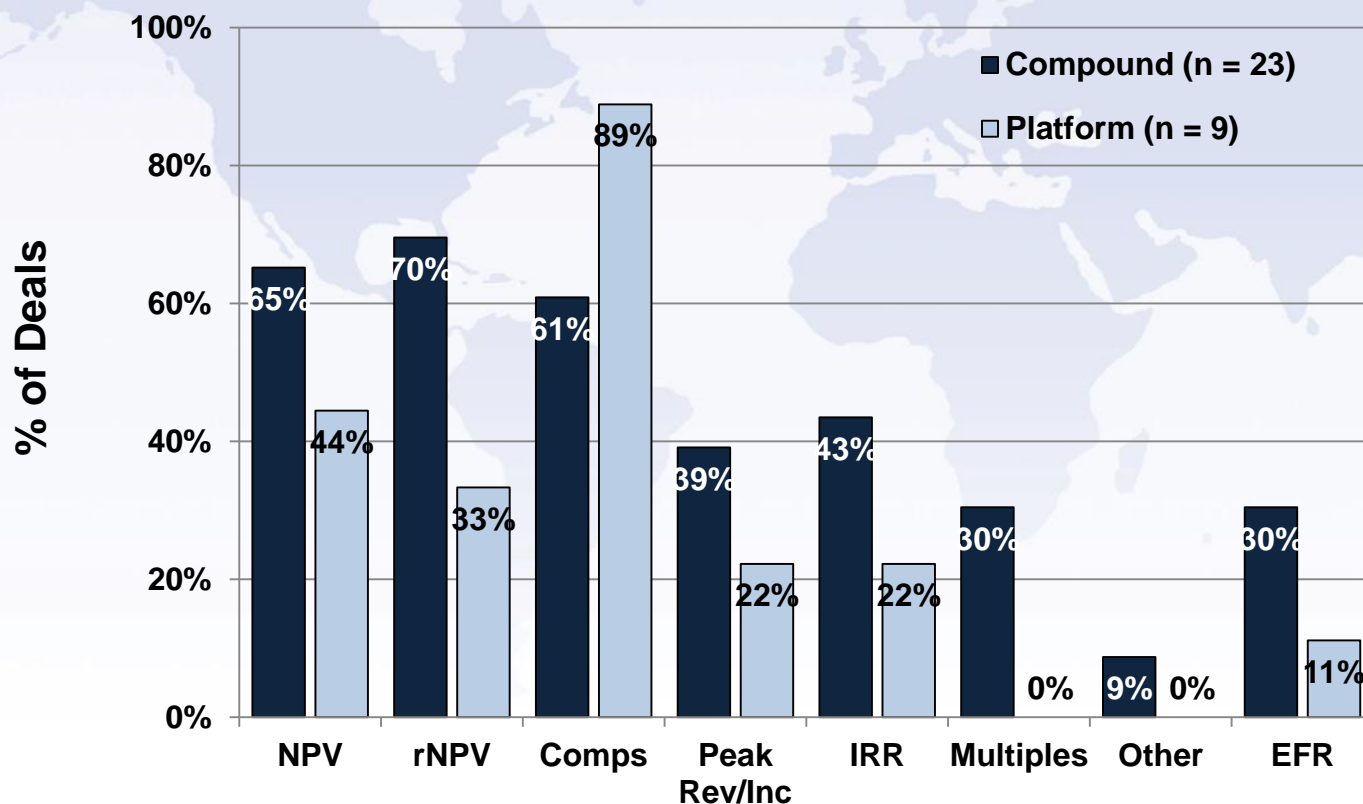


# Valuation (2016 Survey)

Case 1:15-cv-02583-WGV Document 240-24 Filed 04/14/21 Page 100 of 298

## Types of Valuation Methods Used for Compound and Platform Deals

**NPV and rNPV used more frequently in Compound deals, while Comps used more frequently in Platform deals.**



- All methods used more frequently in Compound deals, except for Comps.
- Frequency of use of Comps continues to fluctuate dramatically from survey to survey.
- In 84% of deals financially modeled, multiple methods were used (the highest percentage in any survey).

Q25: Please select ALL methods used: NPV, rNPV, IRR, EFR, Peak Rev. or Inc., Comparables, Multiples, or Other.

\*Includes deals with responses to Question 25 (excluding DNK/NA) crossed with YES responses to Question 24 (excluding DNK/NA)

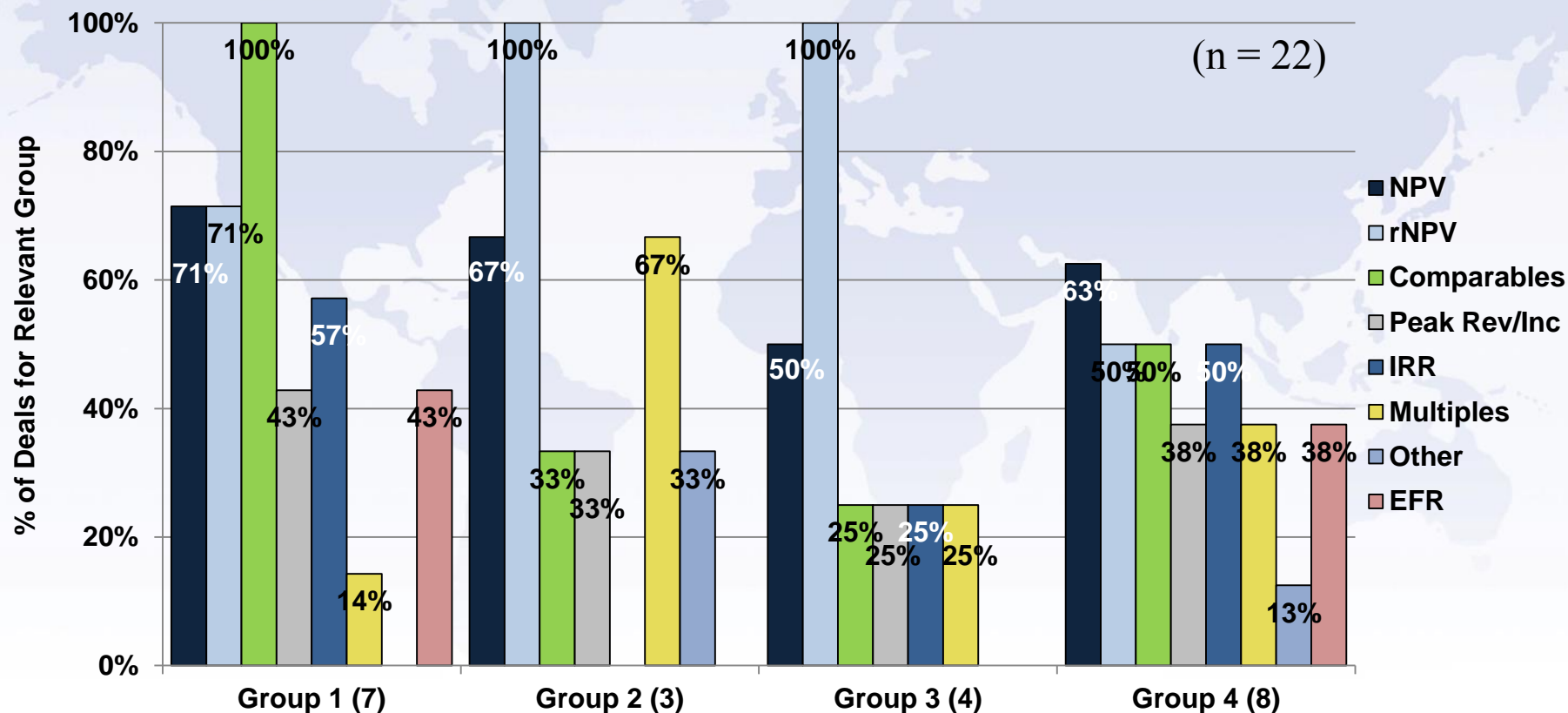


# Valuation (2016 Survey)

Case 1:15-cv-02533-WGY Document 240-24 Filed 04/14/21 Page 101 of 298

## Types of Valuation Methods Used: Compound Deals by Stage of Development

*Multiple methods used across all stages of development.*



Q25: Please select ALL methods used: NPV, rNPV, IRR, EFR, Peak Rev. or Inc., Comparables, Multiples, or Other.

*\*Includes only deals with selections of one or more types of valuation methods and indications of the stage of development in Q9.*

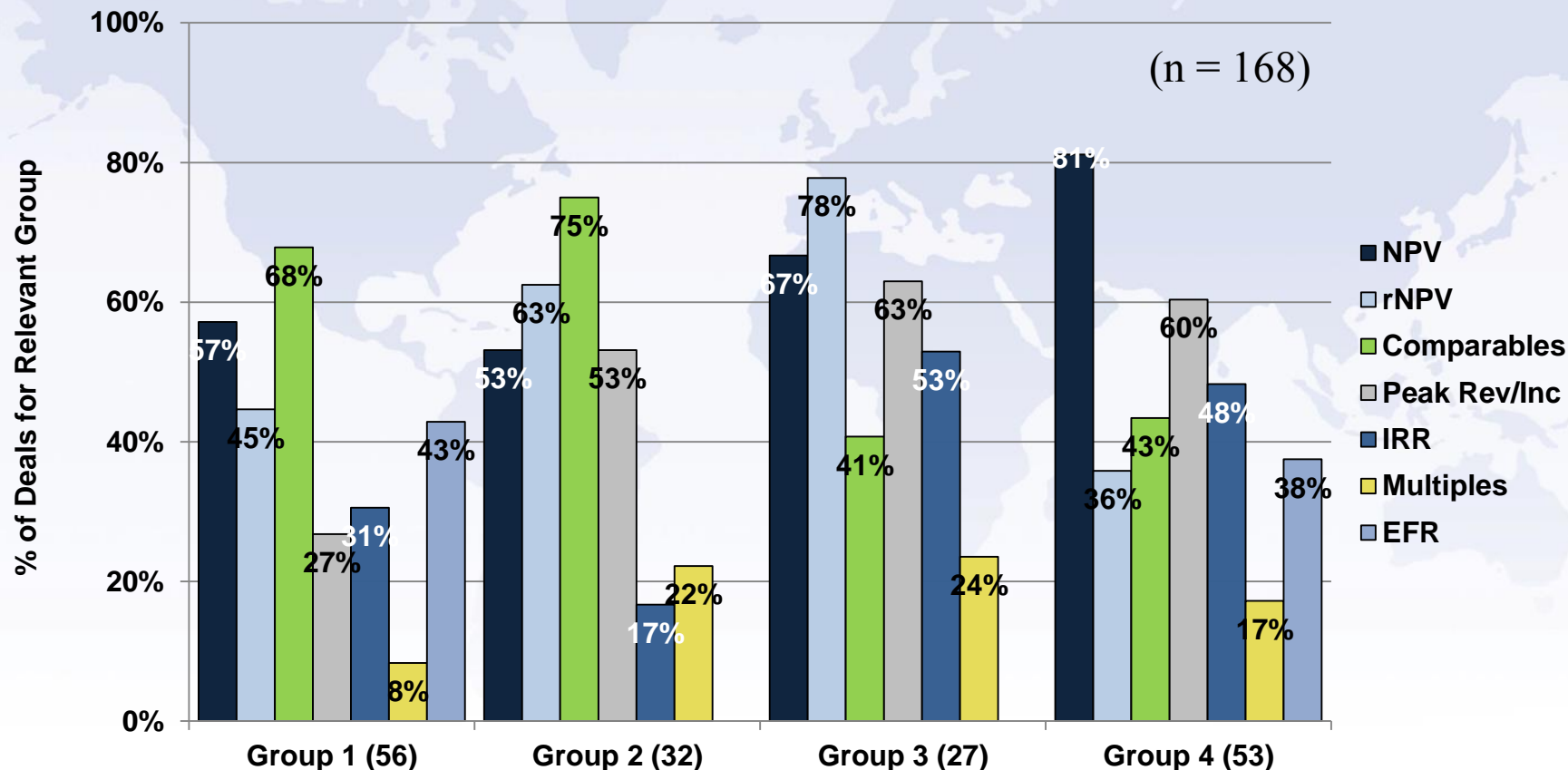


# Valuation (Combined Surveys)

Case 1:14-cv-01263-NGJ Document 240-24 Filed 04/14/21 Page 102 of 298

## Types of Valuation Methods Used: Compound Deals by Stage of Development

**Multiple methods used across all stages of development.**



Note: IRR and Multiples were not choices in the 2009 survey. Therefore, n=36, 18, 17, 21 for Groups 1, 2, 3, 4, respectively. EFR was not a choice until the 2016 survey. Therefore, n=7, 3, 4, 8 for Groups 1, 2, 3, 4, respectively.

Q25: Please select ALL methods used: NPV, rNPV, IRR, EFR, Peak Rev. or Inc., Comparables, Multiples, or Other.

\*Includes only deals with selections of one or more types of valuation methods and indications of the stage of development in Q9.

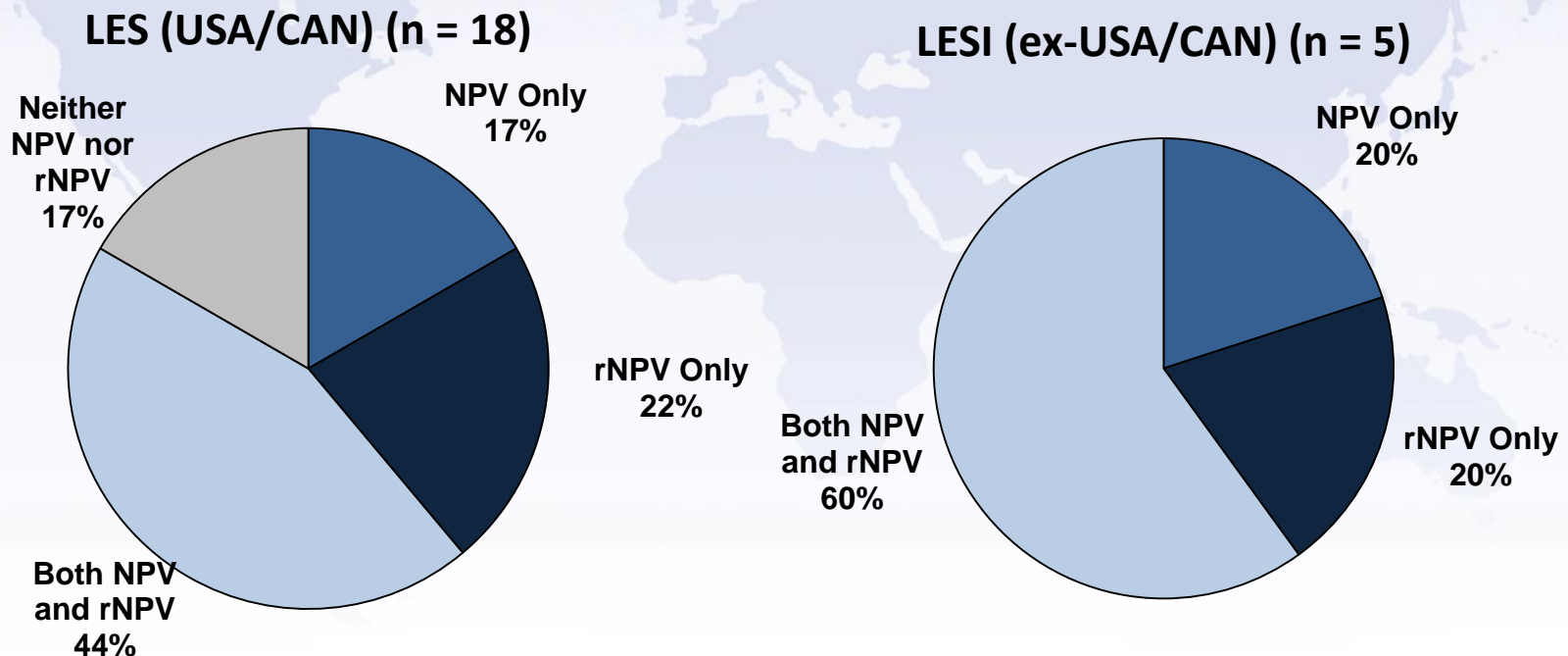




# Valuation (2016 Survey)

## Use of NPV in Compound Deals: LES v. LESI

**LESI (ex-USA/CAN) respondents are more likely to use both NPV and rNPV. Increased frequency of NPV and rNPV use from 2014 survey for both LES (USA/CAN) and LESI (ex-USA/CAN).**



Q25: Please select ALL methods used: NPV, rNPV, IRR, EFR, Peak Rev. or Inc., Comparables, Multiples, or Other.

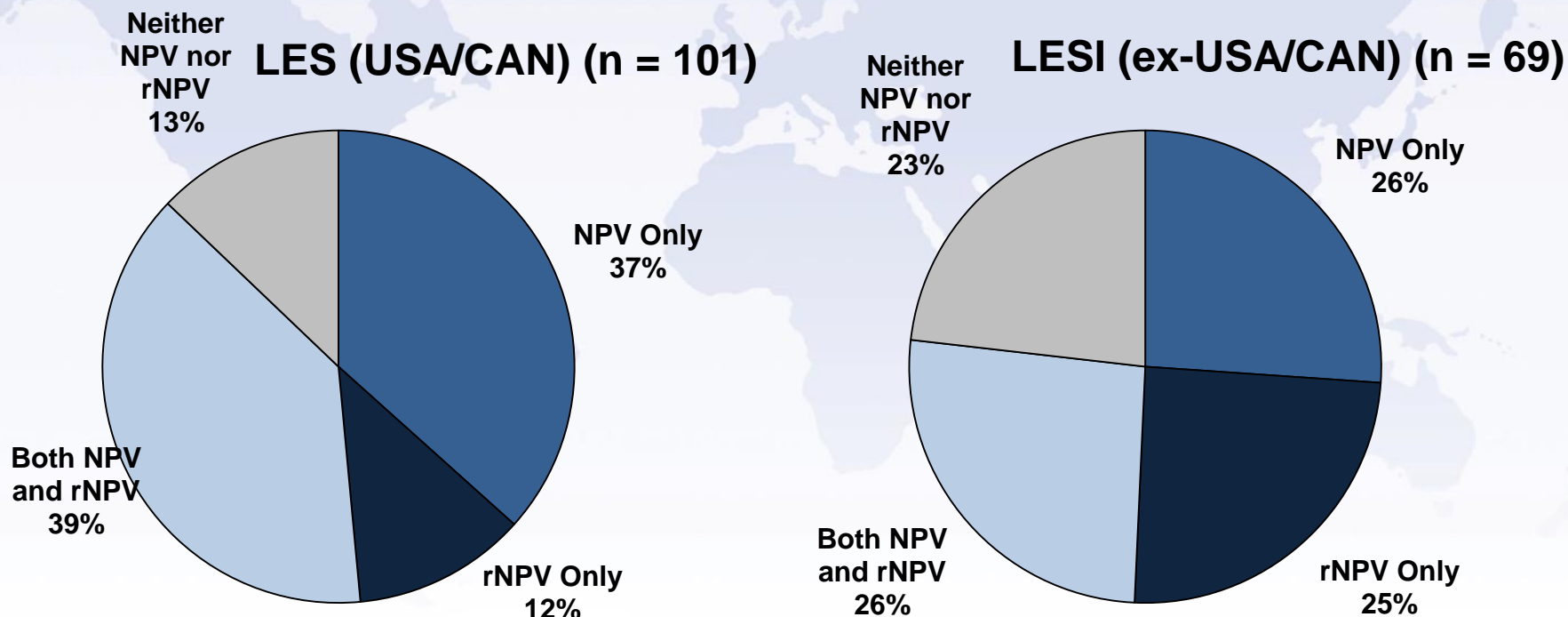
\*Includes only deals with selections of one or more types of valuation methods and the region of the respondents.



# Valuation (Combined Surveys)

## Use of NPV in Compound Deals: LES v. LESI

**LES (USA/CAN) respondents are more likely to use NPV. LESI (ex-USA/CAN) respondents are more likely to use valuation methods other than NPV or rNPV.**



Q25: Please select ALL methods used: NPV, rNPV, IRR, EFR, Peak Rev. or Inc., Comparables, Multiples, or Other.

\*Includes only deals with selections of one or more types of valuation methods and the region of the respondents.





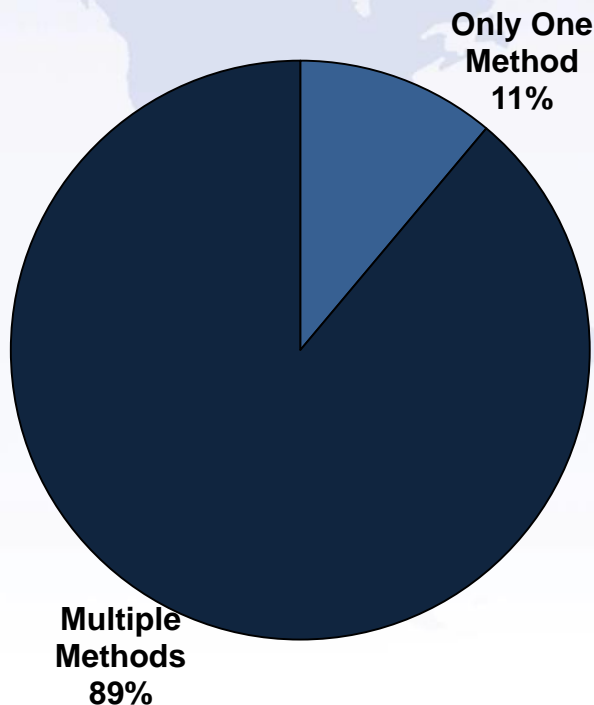
# Valuation (2016 Survey)

Case 1:15-cv-02533-WGY Document 240-21 Filed 04/14/21 Page 105 of 298

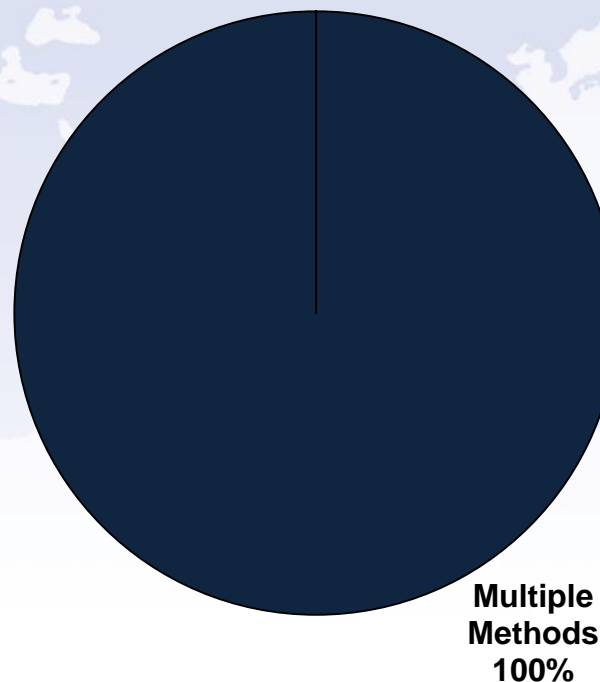
## Use of Multiple Valuation Methods in Compound Deals: LES v. LESI

**Both LES (USA/CAN) and LESI (ex-USA/CAN) respondents reported using multiple valuation methods the vast majority of the time.**

**LES (USA/CAN) (n = 18)**



**LESI (ex-USA/CAN) (n = 5)**



Q25: Please select ALL methods used: NPV, rNPV, IRR, EFR, Peak Rev. or Inc., Comparables, Multiples, or Other.

*\*Includes only deals with selections of one or more types of valuation methods.*

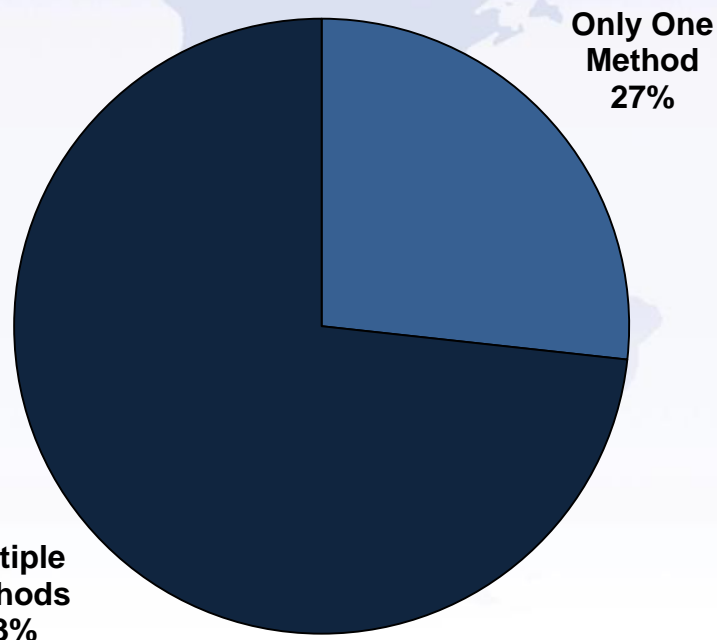


# Valuation (Combined Surveys)

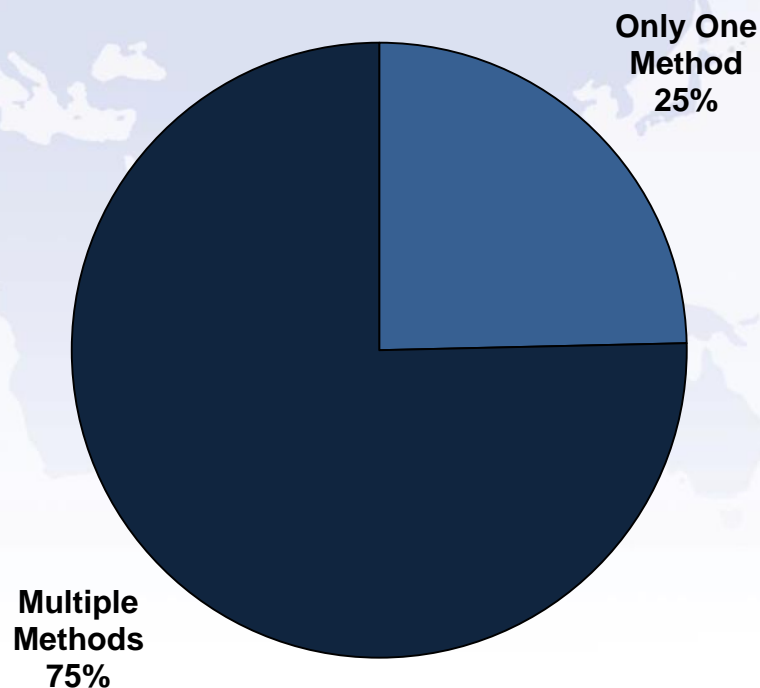
## Use of Multiple Valuation Methods in Compound Deals: LES v. LESI

**LESI (ex-USA/CAN) and LES (USA/CAN) respondents reported similar likelihoods of using multiple valuation methods across all four surveys.**

**LES (USA/CAN) (n = 101)**



**LESI (ex-USA/CAN) (n = 69)**



Q25: Please select ALL methods used: NPV, rNPV, IRR, EFR, Peak Rev. or Inc., Comparables, Multiples, or Other.

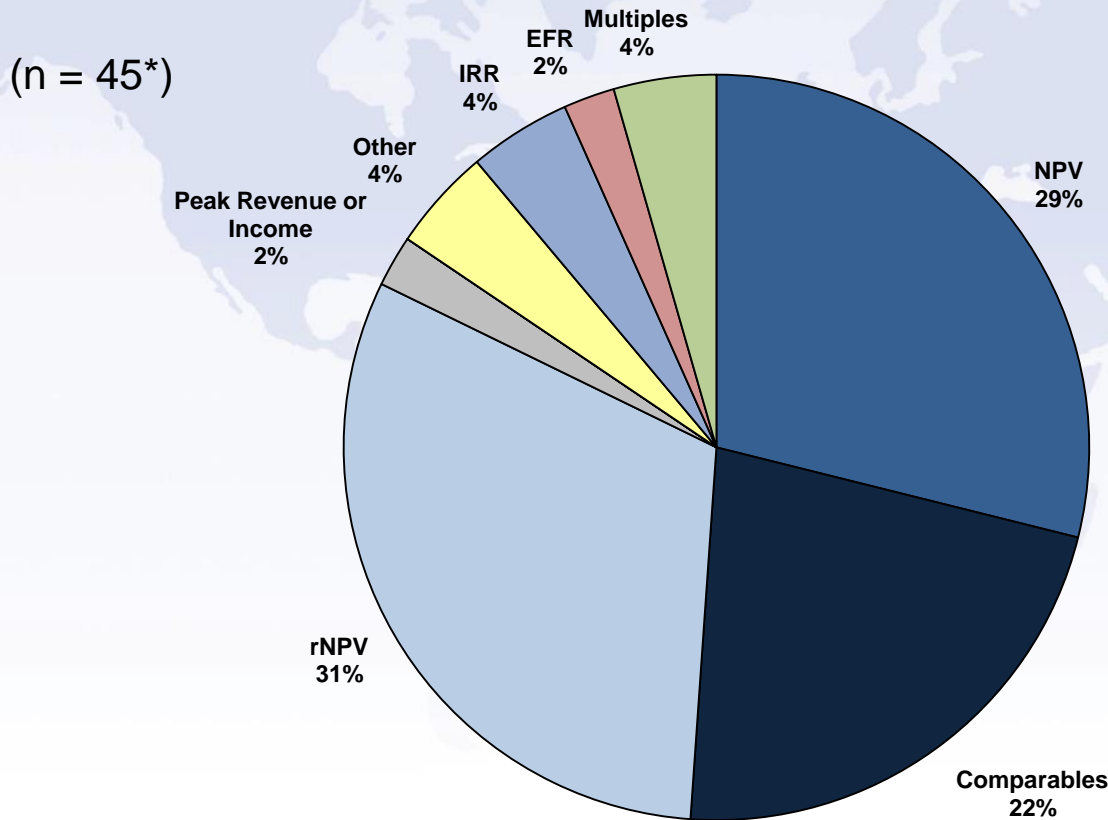
*\*Includes only deals with selections of one or more types of valuation methods.*



# Valuation (2016 Survey)

## “Primary” Valuation Method Used

***NPV, Comparables and rNPV are the primary valuation methods used.***



- ***NPV and rNPV were most frequently used as primary valuation methods.***
- ***Use of rNPV increased significantly, while use of Comparables decreased significantly from the 2014 survey.***

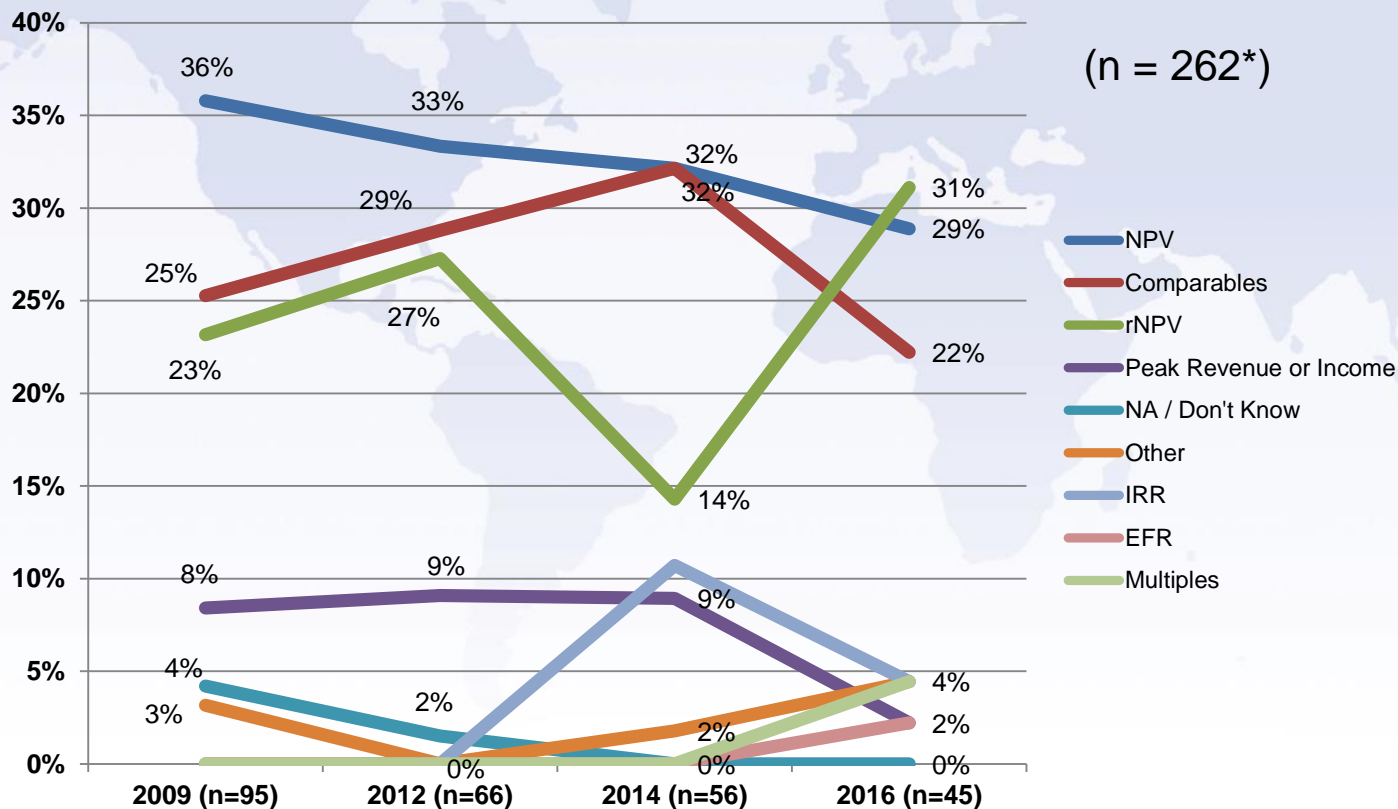
\*Includes only deals with YES response to Question 24 crossed with responses to Question 26



# Valuation (Comparison of Surveys)

## “Primary” Valuation Method Used

**NPV, Comparables, and rNPV have been the primary valuation methods over the 3 surveys.**



- **121% increase in the use of rNPV from 2014 to 2016 (Chosen as primary valuation method in 24% of responses across all 4 surveys).**

- **31% decrease in the use of Comparables from 2014 to 2016 (Chosen as primary valuation method in 27% of responses across all 4 surveys).**

\*Includes only deals with YES response to Question 24 crossed with responses to Question 26

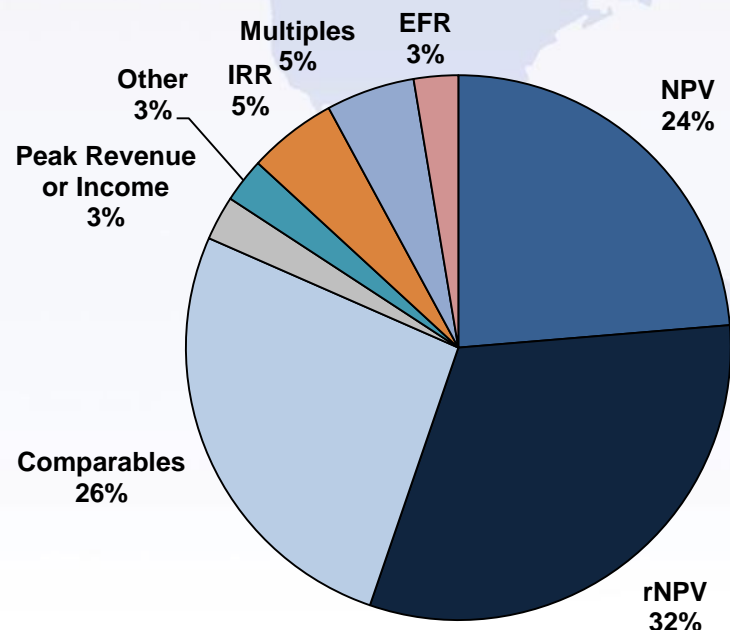


# Valuation (2016 Survey)

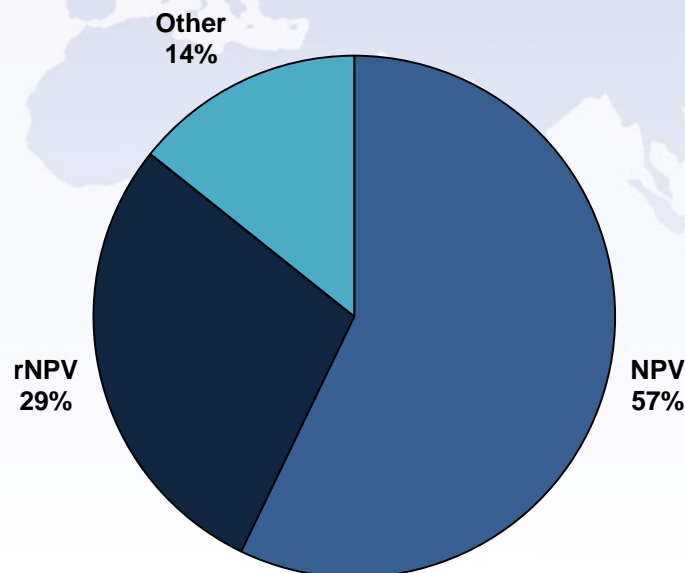
## “Primary” Valuation Method Used

**LESI (ex-USA/CAN) respondents preferred NPV/rNPV, whereas LES (USA/CAN) respondents preferred NPV/rNPV and Comparables.**

**LES (USA/CAN)**  
(n = 38\*)



**LESI (ex-USA/CAN)**  
(n = 7\*)



- For LES (USA/CAN), NPV/rNPV and Comps have been the primary valuation methods in each survey. Reported use of each has changed substantially from survey to survey.
- For LESI (ex-USA/CAN), Comps was the primary valuation method 32%-42% of the time from 2009 to 2014 surveys, but 0% in the 2016 survey.



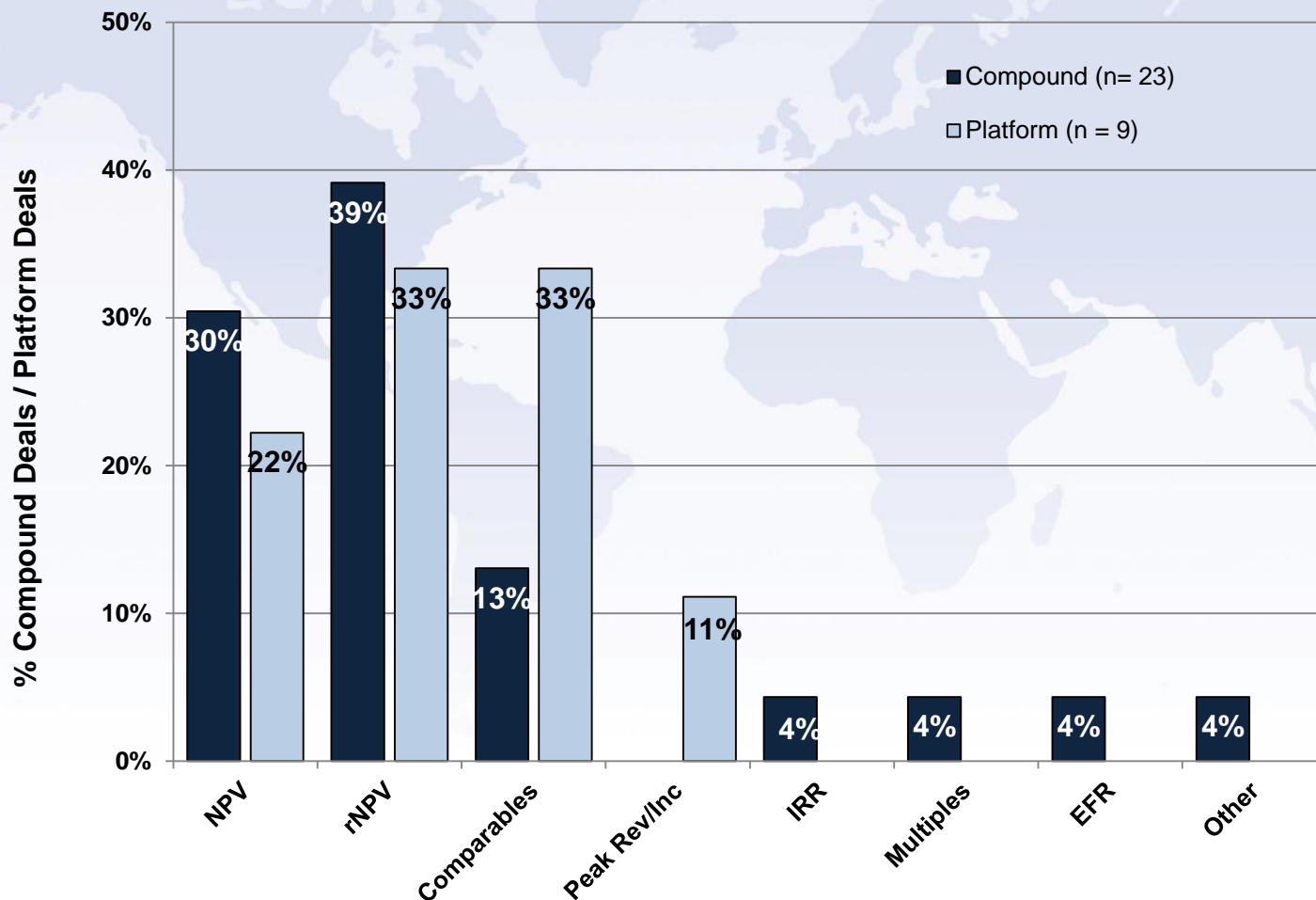
\*Includes only deals with responses to Question 26 crossed with LES (USA/CAN) vs. LESI (ex-USA/CAN).

# Valuation (2016 Survey)

Case 1:15-cv-02533-WGY Document 240-24 Filed 04/14/21 Page 110 of 298

## *“PRIMARY” Valuation Method Used for Compound and Platform Deals*

***rNPV was the most frequent primary method in both Compound and Platform deals.***



- ***Multiples selected as the primary method for the first time, as was EFR in its first survey.***
- ***Comparables continued to be the most commonly reported primary method for Platform deals. NPV and rNPV returned to the most commonly reported primary valuation method for Compound deals.***

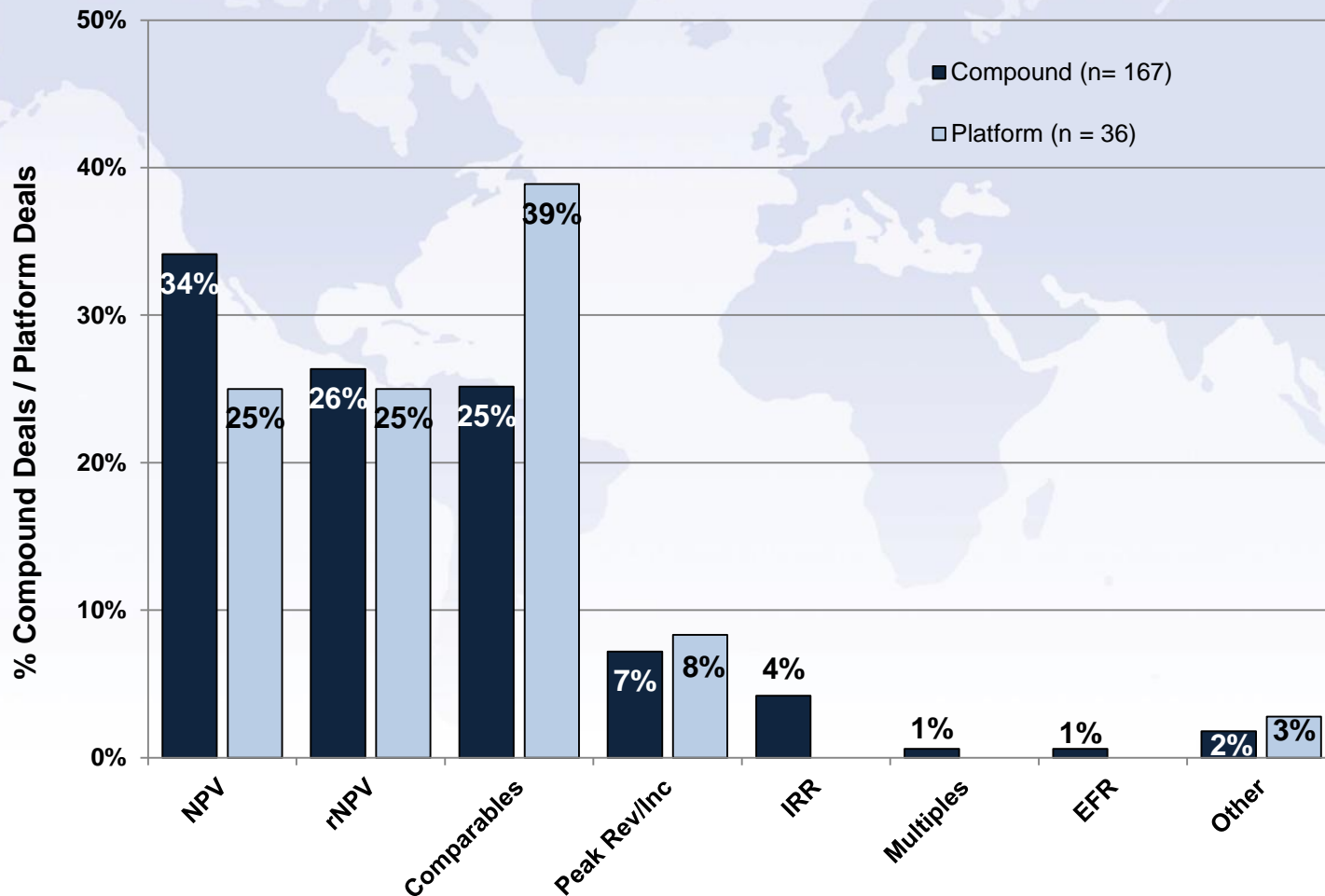




# Valuation (Combined Surveys)

## *“PRIMARY” Valuation Method Used for Compound and Platform Deals*

**NPV preferred for Compound deals while Comparables preferred for Platform deals.**



- **For Compound deals, use of NPV/rNPV was at least 61% in the 2009 and 2012 surveys, dropped to 41% in 2014, but returned to 60% in 2016.**
- **For Platform deals, use of Comps exceeded NPV/rNPV for the first time in 2014, but NPV/rNPV increased in 2016.**



# Valuation (2016 Survey)

## *Methods Summary: General Observations*

- Respondents reported more frequent use of every valuation method except Peak Revenue.
- Biotechnology companies tended to use more valuation methods than pharmaceutical companies, with a greater preference for rNPV and Comparables. Pharmaceutical companies used IRR more frequently than biotechnology companies (all 4 surveys).
- Companies with more than \$250M in sales used NPV/rNPV as the primary valuation method 80% of the time, with no responses for Comparables. Companies with less than \$250M were more likely to use non-NPV/rNPV methods.
  - Not a single primary valuation response from not-for-profits/governmental agencies (15 responses in 2009, 8 in 2012, 0 in 2014)
- NPV/rNPV was the most favored primary method (75% of responses) post proof of concept (up from 53% in 2014) – higher than pre proof of concept (48%).
- Higher fixed royalty rates on financially modeled deals (7.9% vs. 5.8% for deals not modeled) – narrower gap than 2014.





# Valuation (2016 Survey)

## Methods Summary: “Compound” Deals

- Licensees modeled more frequently than licensors (73% vs. 62%).
- Tiered royalty rate deals were more likely to be financially modeled than flat royalty rate deals (73% vs. 60%). The reverse was true in the 2014 survey.
- Financial modeling increases with stage of development (all 4 surveys).
- Pharmaceutical companies had a higher propensity to financially model deals compared with biotechnology companies. 4 survey weighted average: pharma = 94%, biotech = 68%.
- Companies with sales >\$100 M had a higher propensity to financially model deals, consistent with previous 3 surveys.
- Pharmaceutical companies reported increase use of rNPV and decreased use of Peak Revenue. Only 5 biotech company compound deals reported financial modeling. (N=1 in 2014).
- Licensors and licensees differed in their use each of the methods:
  - Licensors used Comparables more frequently (48% to 27%).
  - Licensees used all other methods (except Multiples) more frequently.

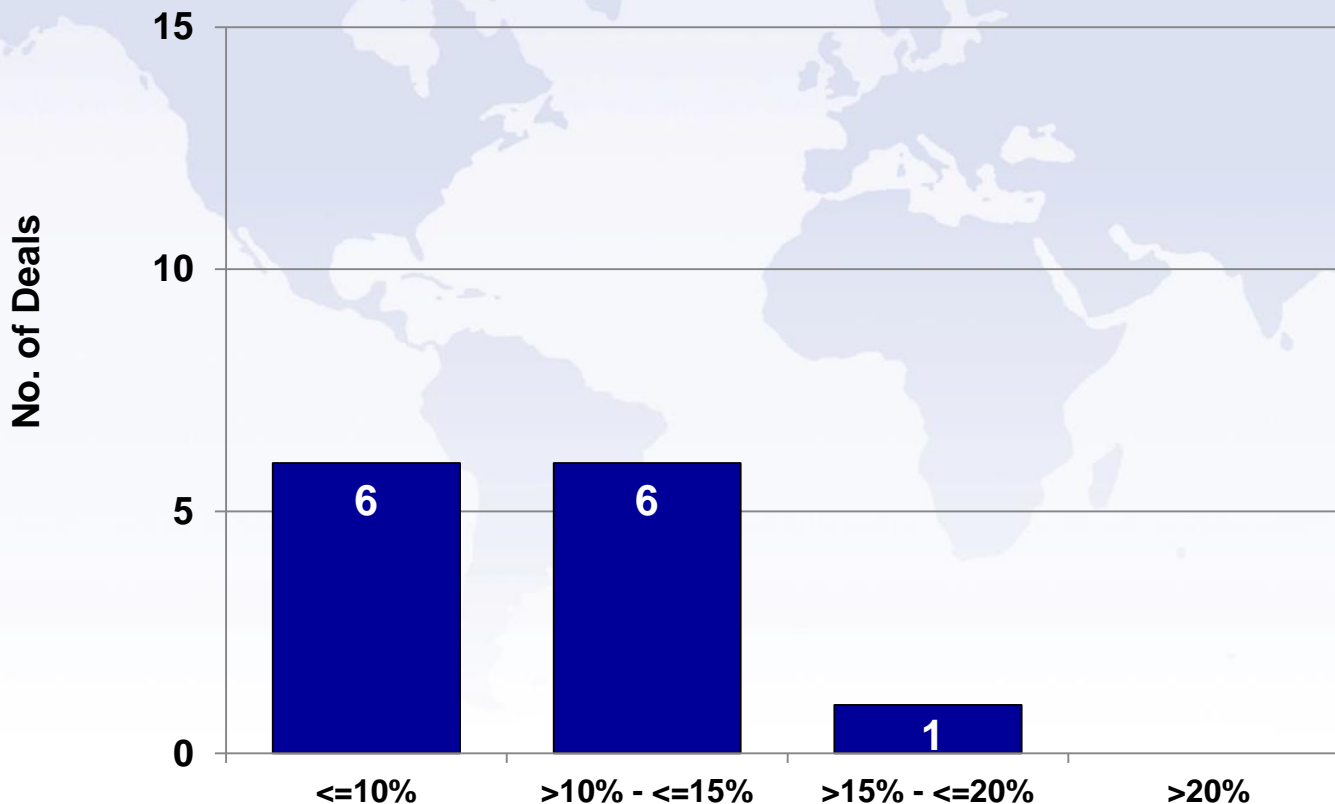


# Valuation (2016 Survey)

## Discount Rate Ranges – Compound Deals only

**Almost all reported discount rates were less than 15%.**

(n = 13\*)



- **The share of deals with discount rates in the 10-15% range decreased from 76% in the 2014 survey to 46%. (43% in 2012; 62% in 2009)**
- **The share of deals with discount rates less than 10% increased from 12% in the 2014 survey to 46%. (30% in 2012; 19% in 2009).**

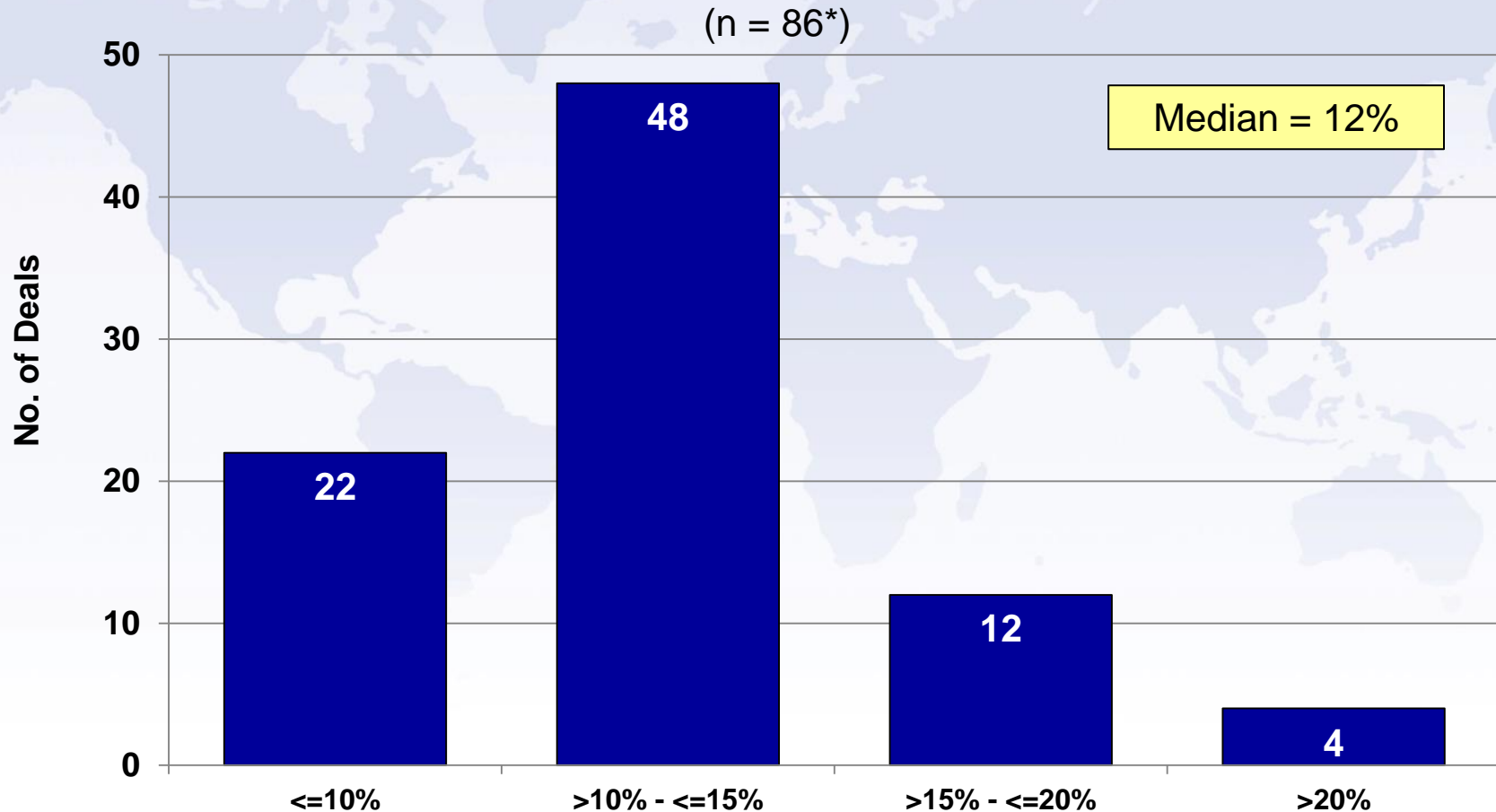


*\*Includes only Compound deals in which respondents provided discount rates used in the valuation analysis.*

# Valuation (Combined Surveys)

## Discount Rate Ranges – Compound Deals only

*The most frequent discount rate used (in NPV/rNPV) was 10-15%.*



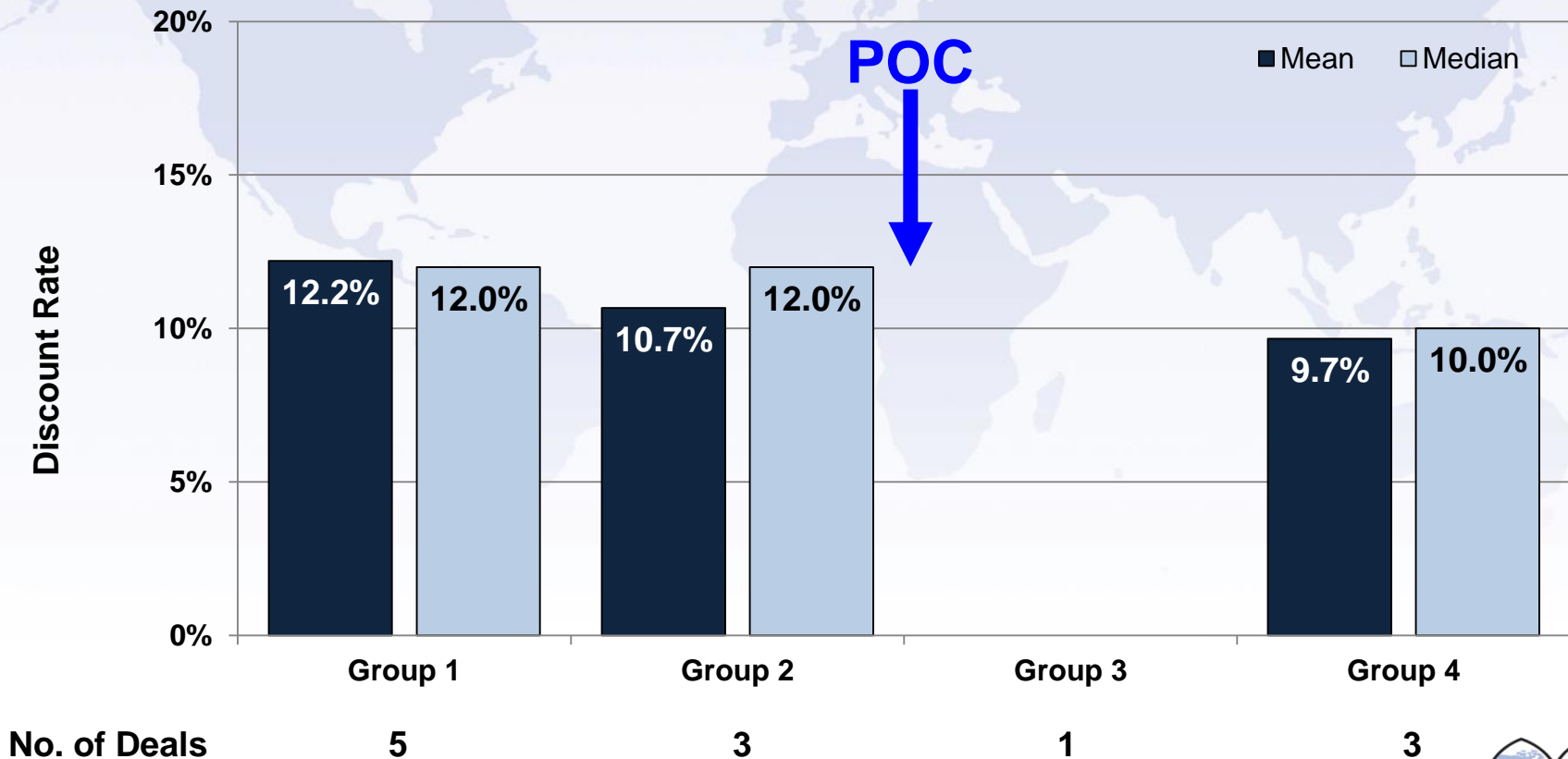
*\*Includes only Compound deals in which respondents provided discount rates used in the valuation analysis.*

# Valuation (2016 Survey)

Case 1:15-cv-01253-WGY Document 240-24 Filed 04/14/21 Page 116 of 298

## Discount Rates by Stage of Development – Compound Deals only

**No significant difference between discount rates reported for early and late stage deals. Average discount rate reported by LESI (ex-USA/CAN) respondents was 1.0% lower than rate reported by LES USA/CAN respondents, median was also 1.0% lower.**



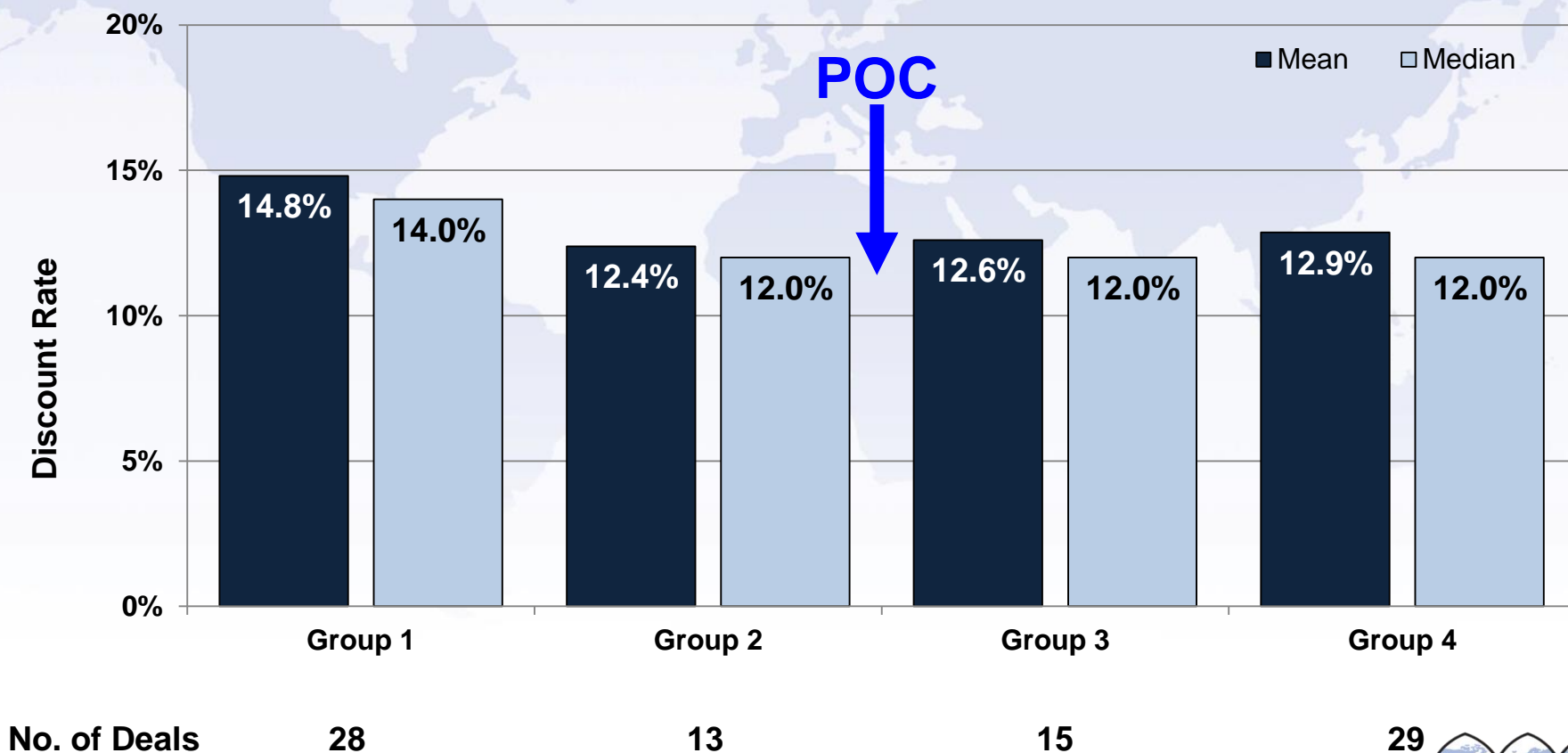
Includes only responses providing discount rates in response to, Question 28  
crossed with indications of stage of development (Question 9)



# Valuation (Combined Surveys)

## Discount Rates by Stage of Development – Compound Deals only

**Higher discount rates reported for early stage deals. Discount rates reported by respondents using NPV as the primary valuation method were actually slightly lower than discount rates reported by respondents using rNPV.**



Includes only responses providing discount rates in response to, Question 28  
crossed with indications of stage of development (Question 9)



# Valuation (Combined Surveys)

Case 1:19-cv-02333-WCY Document 240-24 Filed 04/24/21 Page 118 of 298

## *Discount Rates by Primary Valuation Method - Compound Deals only*

***Rates reported for “rNPV” indicate more stage of development risk reflected in discount rate used than “NPV”. (Only 8 responses for 2016 survey, which is not enough to report discount rates by stage of development.)***

(n = 67\*)

	NPV	
	Mean	Median
<b>Group 1 (10)</b>	12.8%	14.0%
<b>Group 2 (3)</b>	14.7%	12.0%
<b>Group 3 (6)</b>	10.3%	10.0%
<b>Group 4 (21)</b>	13.5%	13.0%

	rNPV	
	Mean	Median
<b>Group 1 (9)</b>	16.6%	15.0%
<b>Group 2 (7)</b>	12.7%	12.0%
<b>Group 3 (7)</b>	14.1%	15.0%
<b>Group 4 (4)</b>	10.3%	10.5%

\* Includes only responses providing discount rates in response to Question 28 crossed with primary valuation methods of NPV and rNPV (Question 26).

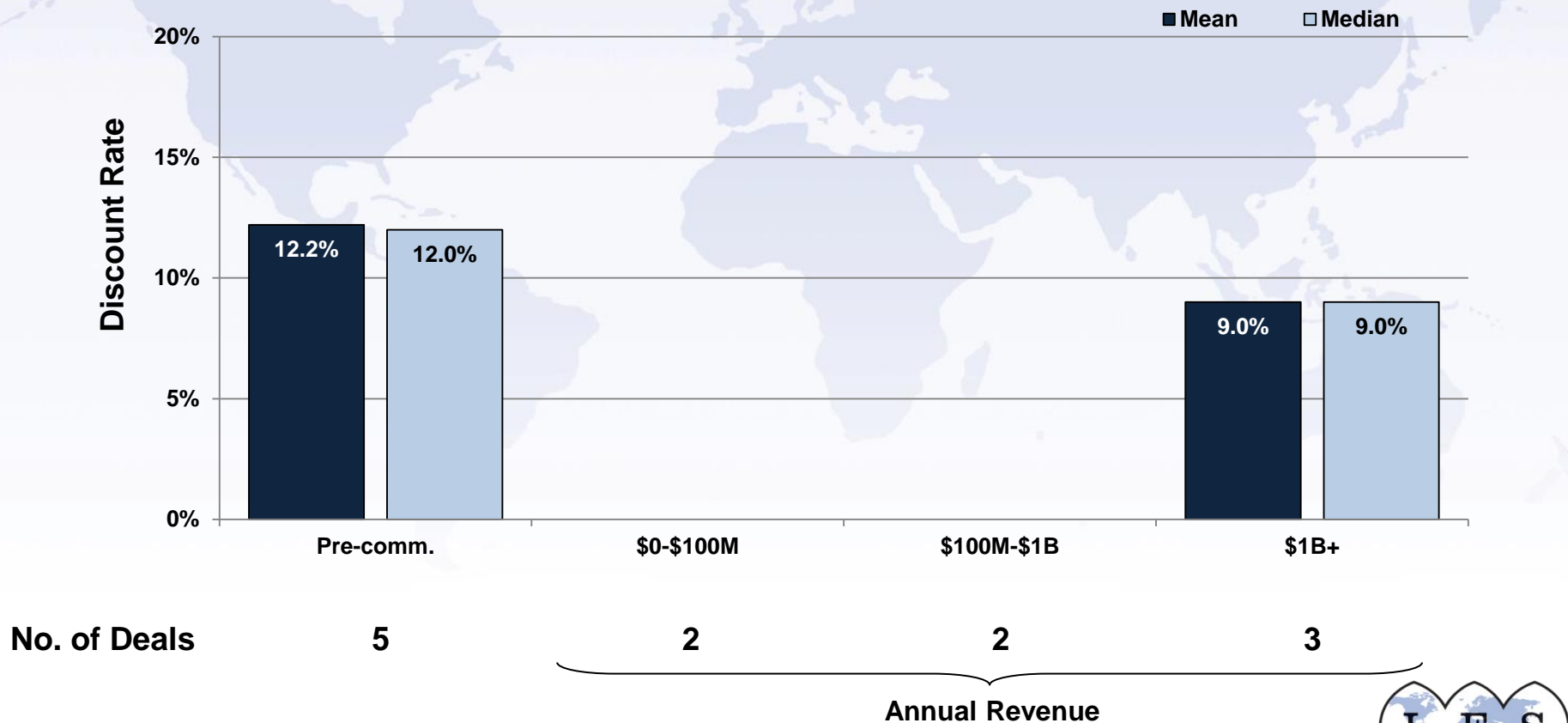




# Valuation (2016 Survey)

## Discount Rates by Company Size – Compound Deals only

**Higher discount rates for pre-commercial companies than for large companies. Number of responses (12) much lower than 2009 and 2012 surveys (24 and 23, respectively).**



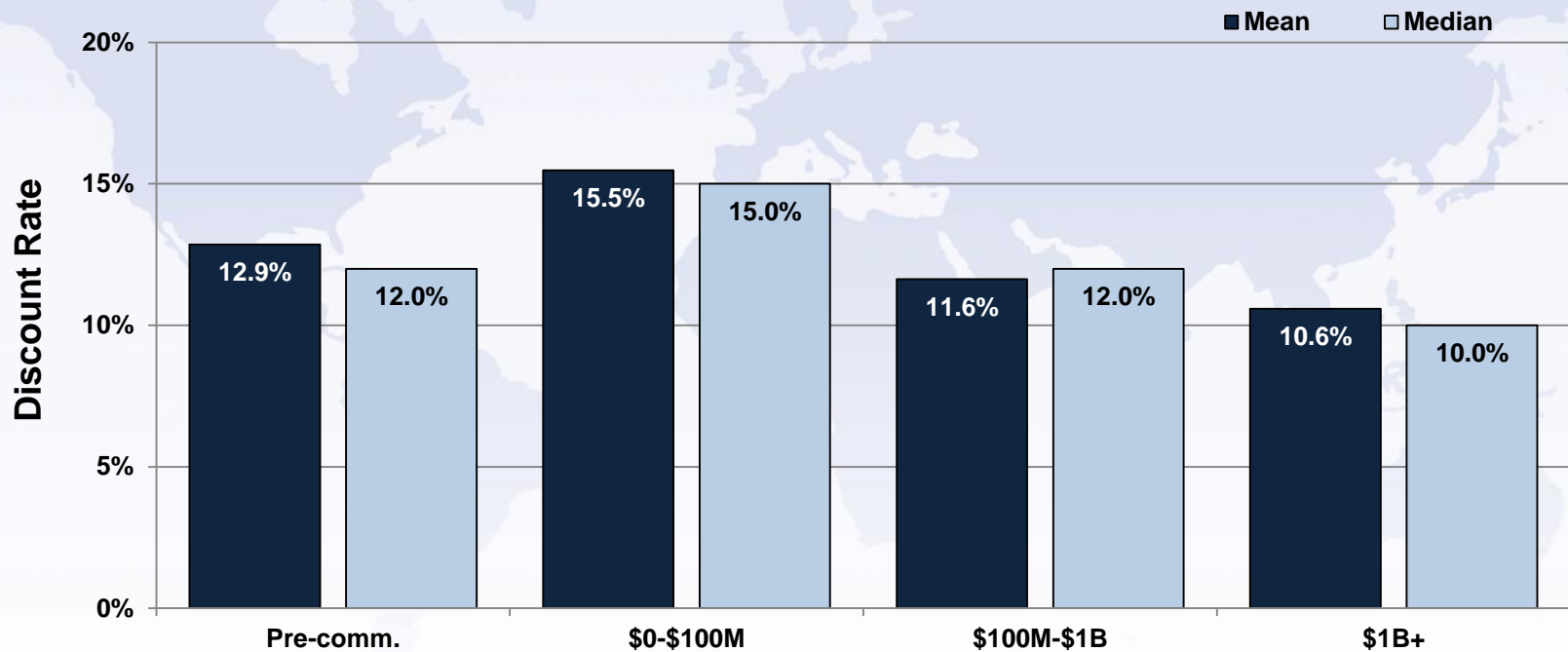
*Includes only responses providing discount rates in response to Question 28 crossed with indications of company size (Question B).*



# Valuation (Combined Surveys)

## Discount Rates by Company Size – Compound Deals only

**Larger organizations tended to use lower discount rates.**



No. of Deals

21

21

19

12

Annual Revenue

*Includes only responses providing discount rates in response to Question 28  
crossed with indications of company size (Question B).*



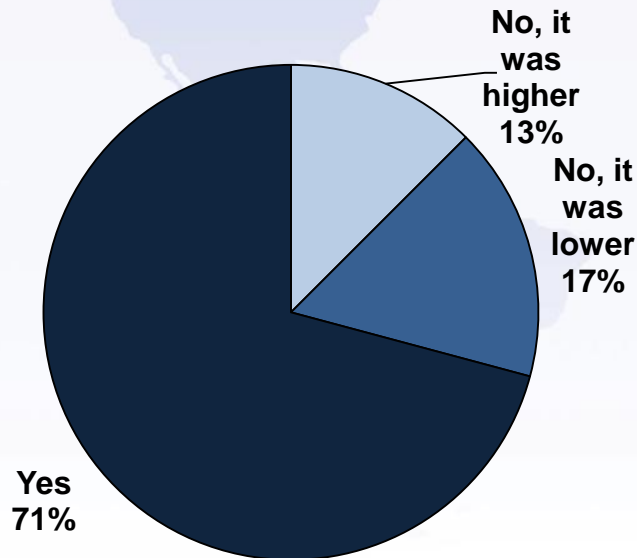


# Valuation (2016 Survey)

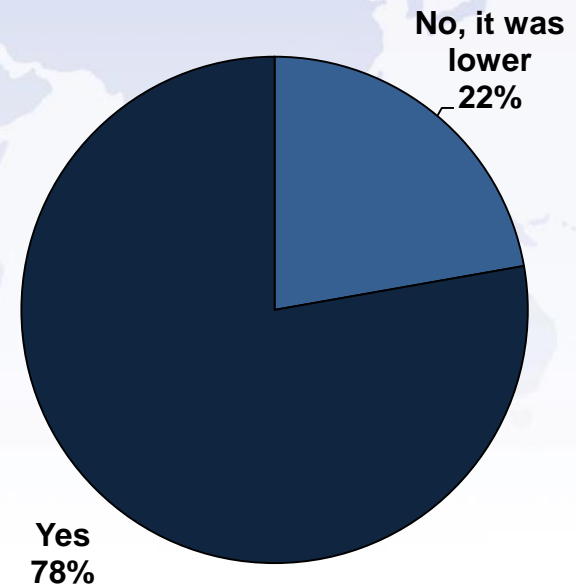
## *Established Prior to Negotiations vs. Final Deal*

***Final deal structures tended to reflect the pre-negotiation valuations. If not, final deal structures tended to be lower than pre-negotiation valuations.***

**Compound  
(n = 24)**



**Platform  
(n = 9)**



Q30: Did the final deal structure reflect the valuation you established prior to the negotiations?

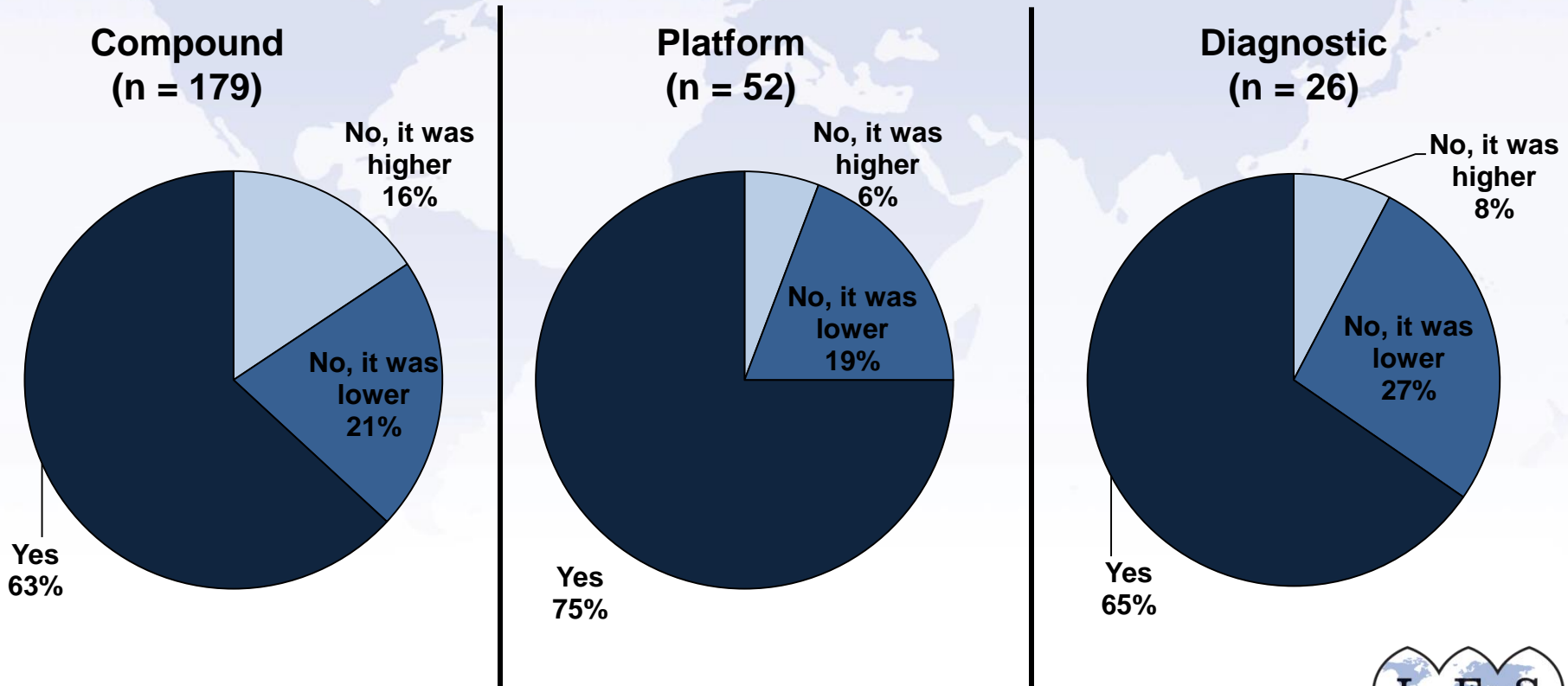
*There were only 2 Diagnostic deals.*



# Valuation (Combined Surveys)

## *Established Prior to Negotiations vs. Final Deal*

***Compound deals from 2016 survey were more likely to reflect pre-negotiation valuations than previous surveys. No 2016 survey respondents reported final deal structures that were higher than pre-negotiation valuations.***



Q30: Did the final deal structure reflect the valuation you established prior to the negotiations?

# Valuation (Combined Surveys)

## Actual Deal Splits by Stage of Development - Compound Deals only

**Significant “Licensor” value created by moving into the clinic (Group 2 & beyond).**

Licensor Split (n = 72)				
	Mean	Median	Min	Max
Group 1 (28)	31%	25%	2%	95%
Group 2 (12)	47%	50%	12%	75%
Group 3 (9)	48%	50%	13%	67%
Group 4 (23)	50%	45%	20%	80%

*\*Includes only responses indicating deal splits in response to Question 31 crossed with indications of stage of development (Question 9).*

*\*2016 data not shown separately because there are only 5 deals across all 4 groups.*



Q31: What was the actual deal split of the deal valuation?

# Valuation (2016 Survey)

## Upfront, Milestone, and Other Payments

**Upfront payments are the most prevalent. Amounts are highest for sales milestones. Development milestones are prevalent with high dollar amounts.**

All Deals						
(\$ in thousands) (n = 117)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	72%	18%	5%	56%	45%	7%
Average	\$10,958	\$22,606	\$1,017	\$49,330	\$92,787	\$20,614
Median	\$200	\$1,700	\$550	\$3,500	\$17,000	\$500
Min	\$2	\$50	\$200	\$25	\$100	\$250
Max	\$250,000	\$350,000	\$2,500	\$650,000	\$850,000	\$88,000

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point; red font → lowest data point.



# Valuation (2016 Survey)

Case 1:15-cv-01253-WGY Document 240-24 Filed 04/14/21 Page 125 of 298

## Upfront, Milestone, and Other Payments – Biotech & Pharma Deals Only

**Upfront payments and development milestones were the most prevalent. Sales and development milestones had high dollar amounts.**

Biotech and Pharma Deals						
(\$ in thousands) (n = 40)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	82%	19%	N/A	83%	72%	10%
Average	\$28,233	\$54,273	N/A	\$97,186	\$169,569	\$35,813
Median	\$7,000	\$2,600	N/A	\$58,000	\$99,000	\$27,500
Min	\$50	\$360	N/A	\$920	\$300	\$250
Max	\$250,000	\$350,000	N/A	\$650,000	\$850,000	\$88,000

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point;  
red font → lowest data point.



# Valuation (2016 Survey)

Case 1:15-cv-01233-MGY Document 240-24 Filed 04/14/21 Page 126 of 298

## Upfront, Milestone, and Other Payments – Academic Deal Only

**Upfront payments and development milestones are the most frequent. Amounts are lower than amounts reported in the 2014 survey.**

Academic Deals						
(\$ in thousands) (n = 37)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	73%	19%	8%	54%	24%	N/A
Average	\$91	\$1,683	\$400	\$3,927	\$695	N/A
Median	\$50	\$250	\$500	\$500	\$188	N/A
Min	\$2	\$50	\$200	\$25	\$135	N/A
Max	\$800	\$8,000	\$500	\$61,000	\$3,250	N/A

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point;  
red font → lowest data point.



# Valuation (Combined Surveys)

## Upfront, Milestone, and Other Payments – Academic Deal Only

**Upfront payments are the most frequent, but amounts are small compared with other payments.**

Academic Deals						
(\$ in thousands) (n = 130)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	71%	25%	8%	57%	31%	13%
Average	\$316	\$2,105	\$282	\$4,592	\$17,579	\$6,374
Median	\$50	\$445	\$188	\$725	\$875	\$475
Min	\$0	\$50	\$10	\$10	\$3	\$75
Max	\$9,000	\$20,000	\$750	\$61,000	\$300,000	\$50,000

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point;  
red font → lowest data point.





# Valuation (2016 Survey)

## Upfront, Milestone, and Other Payments – Government Deals Only

**Prevalence for upfront payments and amounts for sales milestones increased. Consistent with the 2014 survey results, prevalence and amounts for technology access fees were higher in government-reported deals than in biotech, pharma, or academic-reported deals.**

Government Deals						
(\$ in thousands) (n = 8)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	86%	43%	N/A	57%	N/A	N/A
Average	\$251	\$1,400	N/A	\$2,293	N/A	N/A
Median	\$200	\$2,000	N/A	\$800	N/A	N/A
Min	\$30	\$200	N/A	\$70	N/A	N/A
Max	\$500	\$2,000	N/A	\$7,500	N/A	N/A

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point;  
red font → lowest data point.



# Valuation (Combined Surveys)

Case 1:15-cv-01233-WCY Document 246-24 Filed 04/24/15 Page 129 of 298

## Upfront, Milestone, and Other Payments – Government Deals Only

***Prevalence and amount of payments in government-reported deals are similar to academic deals, but government deals have higher development milestone amounts although they are used less frequently.***

Government Deals						
(\$ in thousands) (n = 39)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	58%	26%	11%	32%	32%	N/A
Average	\$193	\$1,039	\$1,889	\$18,491	\$7,976	N/A
Median	\$53	\$500	\$1,265	\$350	\$275	N/A
Min	\$4	\$100	\$25	\$5	\$1	N/A
Max	\$2,000	\$3,000	\$5,000	\$175,000	\$70,000	N/A

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point;  
red font → lowest data point.



# Valuation (2016 Survey)

Case 1:15-cv-01253-MGY Document 240-24 Filed 04/14/21 Page 130 of 298

## Upfront, Milestone, and Other Payments - Compound Deals only

**Upfront payments are the most prevalent. Amounts are small compared with development and sales milestones.**

Compound Deals						
(\$ in thousands) (n = 56)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	76%	19%	5%	67%	67%	N/A
Average	\$17,752	\$38,866	\$1,067	\$65,631	\$105,567	N/A
Median	\$900	\$930	\$500	\$8,500	\$17,000	N/A
Min	\$25	\$250	\$200	\$150	\$100	N/A
Max	\$250,000	\$350,000	\$2,500	\$650,000	\$850,000	N/A

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point;  
red font → lowest data point.



# Valuation (2016 Survey)

Case 1:15-cv-01233-WGY Document 240-24 Filed 04/14/21 Page 131 of 298

## Upfront, Milestone, and Other Payments - Platform Deals only

**Upfront payments and development milestones are the most prevalent. Amounts are highest for milestones and equity investment.**

Platform Deals						
(\$ in thousands) (n = 25)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	72%	23%	N/A	63%	33%	N/A
Average	\$4,164	\$1,560	N/A	\$24,153	\$67,053	N/A
Median	\$150	\$1,700	N/A	\$3,500	\$55,500	N/A
Min	\$5	\$200	N/A	\$40	\$200	N/A
Max	\$60,000	\$2,600	N/A	\$120,000	\$235,000	N/A

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point;  
red font → lowest data point.



# Valuation (Combined Surveys)

Case 1:15-cv-01233-WCY Document 246-24 Filed 04/24/15 Page 132 of 298

## Upfront, Milestone, and Other Payments - Platform Deals only

**Upfront payments and development milestones are the most prevalent. Amounts are highest for sales milestones.**

Platform Deals						
(\$ in thousands) (n = 107)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	60%	31%	14%	58%	27%	17%
Average	\$5,370	\$10,835	\$4,545	\$34,396	\$92,892	\$7,974
Median	\$200	\$2,000	\$1,000	\$3,000	\$9,500	\$1,000
Min	\$0	\$150	\$50	\$10	\$25	\$10
Max	\$110,000	\$200,000	\$32,000	\$500,000	\$840,000	\$50,000

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point;  
red font → lowest data point.



# Valuation (2016 Survey)

Case 1:15-cv-01253-WGY Document 240-24 Filed 04/14/21 Page 133 of 298

## Upfront, Milestone, and Other Payments - Diagnostic Deals only

**Upfront payments and development milestones are most frequent form of payment. Limited data on amounts for research funding, technology access fees, and sales milestones.**

Diagnostic Deals						
(\$ in thousands) (n = 11)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	64%	N/A	N/A	64%	N/A	N/A
Average	\$53	N/A	N/A	\$225	N/A	N/A
Median	\$30	N/A	N/A	\$88	N/A	N/A
Min	\$20	N/A	N/A	\$25	N/A	N/A
Max	\$150	N/A	N/A	\$1,000	N/A	N/A

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point;  
red font → lowest data point.





# Valuation (Combined Surveys)

## Upfront, Milestone, and Other Payments - Diagnostic Deals only

**Upfront payments are most frequent form of payment and have the highest amounts.**

Diagnostic Deals						
(\$ in thousands) (n = 62)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	67%	17%	13%	37%	24%	N/A
Average	\$5,998	\$4,474	\$831	\$857	\$1,932	N/A
Median	\$28	\$1,500	\$168	\$185	\$120	N/A
Min	\$2	\$140	\$10	\$5	\$1	N/A
Max	\$200,000	\$20,000	\$5,000	\$10,000	\$20,000	N/A

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point;  
red font → lowest data point.





# Valuation (2016 Survey)

Case 1:15-cv-02533-WGY Document 240-24 Filed 04/14/21 Page 135 of 298

## Upfront, Milestone, and Other Payments – “Compound” Deals Only - Biotech and Pharma

*While upfront payments are frequently used, parties rely heavily on milestones.*

Biotech and Pharma Deals						
(\$ in thousands)		(n = 28)*				
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	81%	16%	N/A	83%	79%	N/A
Average	\$22,525	\$88,903	N/A	\$113,554	\$187,911	N/A
Median	\$7,000	\$2,625	N/A	\$95,000	\$155,000	N/A
Min	\$75	\$360	N/A	\$920	\$300	N/A
Max	\$100,000	\$350,000	N/A	\$650,000	\$850,000	N/A

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- \* One outlier removed from Upfront Payments
- Blue font → highest data point;
  - red font → lowest data point.



# Valuation (2016 Survey)

Case 1:19-cv-12583-NGV Document 240-24 Filed 04/14/21 Page 136 of 298

## Upfront, Milestone, and Other Payments - “Compound” Deals Only: Pre-POC and Post-POC

**Post-POC deals had higher upfront payments and milestone amounts. Pre-POC milestone amounts were higher in the 2014 survey.**

Pre-POC Deals (n = 38)						
(\$ in thousands)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	76%	22%	N/A	81%	65%	N/A
Average	\$7,342	\$44,795	N/A	\$41,752	\$80,644	N/A
Median	\$250	\$930	N/A	\$6,050	\$14,000	N/A
Min	\$25	\$250	N/A	\$150	\$150	N/A
Max	\$94,000	\$350,000	N/A	\$180,000	\$350,000	N/A

Post-POC Deals (n = 17)						
(\$ in thousands)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	75%	N/A	N/A	29%	71%	N/A
Average	\$43,421	N/A	N/A	\$261,000	\$175,890	N/A
Median	\$10,000	N/A	N/A	\$192,000	\$30,000	N/A
Min	\$100	N/A	N/A	\$10,000	\$100	N/A
Max	\$250,000	N/A	N/A	\$650,000	\$850,000	N/A

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Compound deals only.
- Blue font → highest data point; red font → lowest data point.



# Valuation (Combined Surveys)

## Upfront, Milestone, and Other Payments -

## “Compound” Deals Only: Pre-POC and Post-POC

**All types of payments are used more frequently in Pre-POC deals. Upfront payment amounts are higher in Post-POC deals.**

Pre-POC Deals (n = 176)						
(\$ in thousands)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	79%	36%	9%	75%	52%	13%
Average	\$6,554	\$33,238	\$986	\$53,682	\$97,886	\$10,786
Median	\$850	\$3,000	\$500	\$10,000	\$13,500	\$1,000
Min	\$0	\$150	\$5	\$100	\$5	\$75
Max	\$100,000	\$1,000,000	\$3,600	\$660,000	\$2,000,000	\$88,000

Post-POC Deals (n = 107)*						
(\$ in thousands)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	63%	12%	5%	39%	46%	3%
Average	\$15,288	\$13,583	\$10,521	\$45,510	\$70,663	\$2,500
Median	\$5,000	\$8,500	\$50	\$10,000	\$13,500	\$2,000
Min	\$50	\$500	\$20	\$75	\$50	\$500
Max	\$100,000	\$35,000	\$50,000	\$650,000	\$850,000	\$5,000

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- \* Two outliers removed from Post-POC Upfront Payments
- Blue font → highest data point; red font → lowest data point.



# Valuation (2016 Survey)

Case 1:15-cv-01233-MGY Document 240-24 Filed 04/14/21 Page 138 of 298

## Upfront, Milestone, and Other Payments - “Compound” Deals: Small and Large Companies

**Deals between “large” companies involve more frequent and higher upfront payments. Milestones in “large” company deals were used much more frequently and in higher amounts than in the 2014 survey.**

(\$ in thousands) Deals between Operating Companies with Less than \$100 million in Annual Sales (n = 23)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	68%	23%	N/A	57%	67%	N/A
Average	\$12,738	\$7,182	N/A	\$132,188	\$108,243	N/A
Median	\$1,250	\$1,500	N/A	\$107,500	\$50,000	N/A
Min	\$75	\$300	N/A	\$500	\$100	N/A
Max	\$100,000	\$30,000	N/A	\$650,000	\$500,000	N/A

(\$ in thousands) Deals between Operating Companies with More than \$500 million in Annual Sales (n = 11)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	82%	N/A	N/A	90%	100%	N/A
Average	\$26,622	N/A	N/A	\$76,147	\$207,780	N/A
Median	\$10,000	N/A	N/A	\$37,000	\$126,500	N/A
Min	\$100	N/A	N/A	\$920	\$300	N/A
Max	\$94,000	N/A	N/A	\$240,000	\$850,000	N/A

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Compound deals only.
- Blue font → highest data point; red font → lowest data point.



# Valuation (Combined Surveys)

Case 1:15-cv-01233-WCY Document 246-24 Filed 04/24/15 Page 139 of 298

## Upfront, Milestone, and Other Payments - “Compound” Deals: Small and Large Companies

*There has been similar usage of all types of payments, but payment amounts in deals between “large” companies have been higher.*

(\$ in thousands) Deals between Operating Companies with Less than \$100 million in Annual Sales (n = 122)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	72%	28%	7%	61%	47%	11%
Average	\$9,490	\$45,358	\$7,429	\$59,500	\$125,896	\$9,842
Median	\$2,000	\$5,000	\$1,000	\$15,000	\$30,000	\$5,000
Min	\$30	\$300	\$35	\$200	\$100	\$200
Max	\$100,000	\$1,000,000	\$50,000	\$650,000	\$2,000,000	\$50,000

(\$ in thousands) Deals between Operating Companies with More than \$500 million in Annual Sales (n = 70)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	73%	24%	4%	58%	53%	N/A
Average	\$15,477	\$34,094	\$357	\$95,876	\$112,334	N/A
Median	\$5,000	\$8,000	\$50	\$35,000	\$43,000	N/A
Min	\$20	\$500	\$20	\$150	\$50	N/A
Max	\$100,000	\$350,000	\$1,000	\$660,000	\$850,000	N/A

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Compound deals only.
- Blue font → highest data point; red font → lowest data point.





# Valuation (2016 Survey)

## Upfront, Milestone, and Other Payments - Compound Deals: “between” Small and Lg. Companies

**2016 deals in which “small” licensors license to “large” licensees involved much higher payments than those reported in the 2014 survey.**

Deals Involving 'Small' Licensors and 'Large' Licensees (n = 13)						
(\$ in thousands)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	100%	N/A	N/A	100%	100%	N/A
Average	\$33,142	N/A	N/A	\$138,682	\$190,000	N/A
Median	\$20,000	N/A	N/A	\$115,000	\$160,000	N/A
Min	\$1,200	N/A	N/A	\$500	\$500	N/A
Max	\$100,000	N/A	N/A	\$650,000	\$500,000	N/A

Deals Involving “Large” Licensors and “Small” Licensees

N = 1

Number of Responses Too Small to Report Data

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point; red font → lowest data point
- “Small” → <\$100M in annual sales; “Large” → >\$500M.



# Valuation (Combined Surveys)

Case: 19-cv-02503-WGS Document 240-24 Filed 04/14/21 Page 141 of 298

## Upfront, Milestone, and Other Payments - Compound Deals: “between” Small and Lg. Companies

**Deals in which “small” licensors license to “large” licensees almost always included upfront payments and development milestones.**

(\$ in thousands) Deals Involving 'Small' Licensors and 'Large' Licensees (n = 68)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	91%	38%	8%	86%	71%	8%
Average	\$16,251	\$72,646	\$11,180	\$111,799	\$169,960	\$28,600
Median	\$7,250	\$6,500	\$1,000	\$42,500	\$80,000	\$20,000
Min	\$125	\$300	\$300	\$500	\$500	\$5,000
Max	\$100,000	\$1,000,000	\$50,000	\$660,000	\$2,000,000	\$88,000

(\$ in thousands) Deals Involving 'Large' Licensors and 'Small' Licensees (n = 11)						
	Upfront Payment	Research Funding	Technology Access Fee	Development Milestones	Sales Milestones	Equity Investment
Share of Deals	64%	N/A	N/A	60%	N/A	N/A
Average	\$21,414	N/A	N/A	\$31,667	N/A	N/A
Median	\$5,000	N/A	N/A	\$12,000	N/A	N/A
Min	\$100	N/A	N/A	\$7,000	N/A	N/A
Max	\$100,000	N/A	N/A	\$125,000	N/A	N/A

Q17: What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)?

- Blue font → highest data point; red font → lowest data point
- “Small” → <\$100M in annual sales; “Large” → >\$500M.





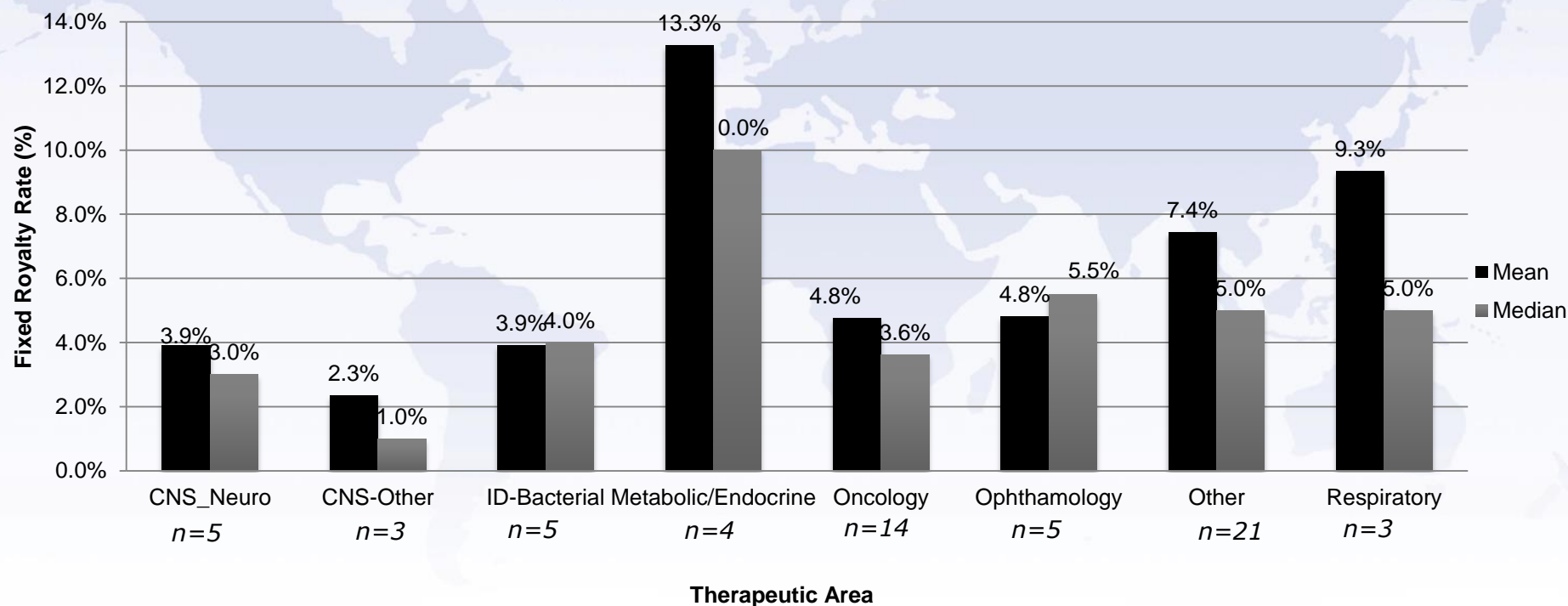
# Analysis of Deals by Therapeutic Area



# Analysis of Therapeutic Areas

## - Fixed Royalty Rates

**Mean and Median of Fixed Royalty Rates by Therapeutic Area**



n = number of deals

Accompanying data on following page.



# Analysis of Therapeutic Areas

## - Fixed Royalty Rates

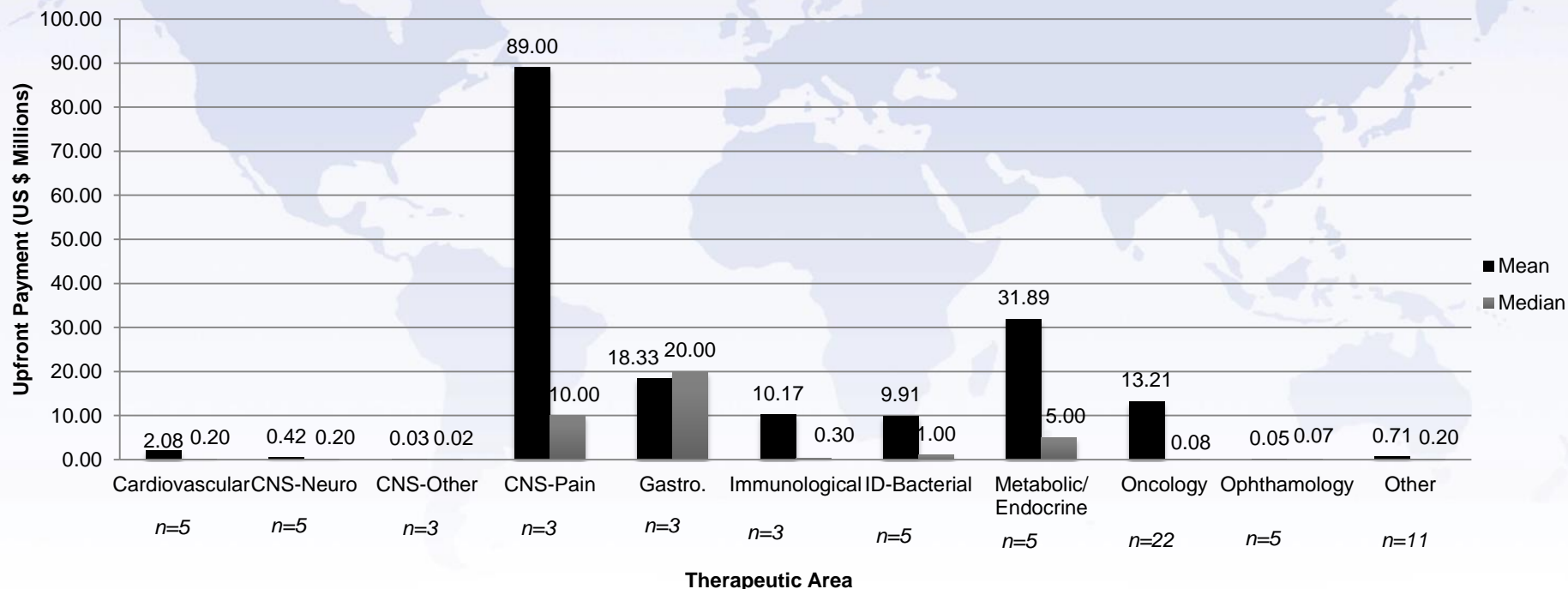
Fixed Royalty Rates (n=72)					
Therapeutic Area	# of Deals	Min	Median	Max	Mean
Blood & Clotting	1				
Cardiovascular	2				
CNS_Neuro	5	2.0%	3.0%	7.0%	3.9%
CNS-Other	3	1.0%	1.0%	5.0%	2.3%
Gastrointestinal	2				
Immuno	1				
ID-Bacterial	5	2.5%	4.0%	5.0%	3.9%
ID-Other	2				
ID-Viral	1				
Inflam/Musco	2				
Metabolic/Endocrine	4	3.0%	10.0%	30.0%	13.3%
Oncology	14	1.0%	3.6%	15.0%	4.8%
Ophthalmology	5	3.0%	5.5%	6.0%	4.8%
Other	21	2.0%	5.0%	30.0%	7.4%
Respiratory	3	3.0%	5.0%	20.0%	9.3%
Urological/Renal	1				



# Analysis of Therapeutic Areas

## - Upfront Payments

**Mean and Median of Upfront Payments by Therapeutic Area**



n = number of deals

Accompanying data on following page.



# Analysis of Therapeutic Areas

## - Upfront Payments

Upfront Payments (n=81)					
Therapeutic Area	# of Deals	Min	Median	Max	Mean
Blood & Clotting	1				
Cardiovascular	5	0.10	0.20	7.00	2.08
CNS-Neuro	5	0.07	0.20	1.25	0.42
CNS-Other	3	0.02	0.02	0.05	0.03
CNS-Pain	3	7.00	10.00	250.00	89.00
Gastrointestinal	3	10.00	20.00	25.00	18.33
Immunological	3	0.20	0.30	30.00	10.17
ID-Bacterial	5	0.05	1.00	45.00	9.91
ID-Other	2				
ID-Viral	2				
Inflammation/musculoskeletal	2				
Metabolic/ Endocrine	5	0.15	5.00	94.00	31.89
Oncology	22	0.01	0.08	100.00	13.21
Ophthalmology	5	0.03	0.07	0.08	0.05
Other	11	0.00	0.20	2.50	0.71
Respiratory	2				
Urological/Renal	2				

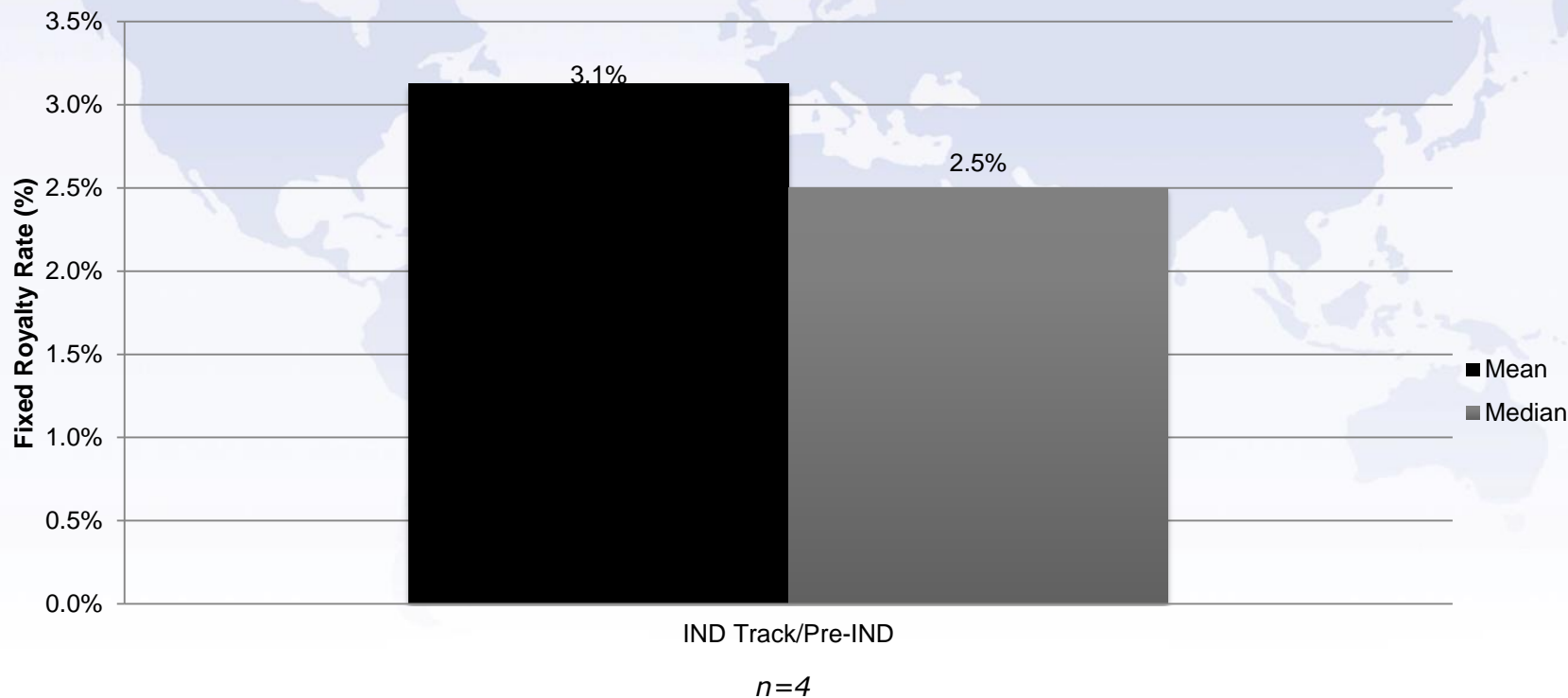


# Analysis of Therapeutic Areas

Case 1:19-cv-02538-MBS Document 240-24 Filed 04/14/21 Page 147 of 298

## CNS: Neurological/Neurodegenerative – Fixed Royalty Rates

**Mean and Median of Fixed Royalty Rate by Stage of Development**



n = number of deals

Accompanying data on following page.

Stage of Development



# Analysis of Therapeutic Areas

Case 1:19-cv-12533-WBY Document 2-1 Filed 04/14/21 Page 148 of 298

## CNS: Neurological/Neurodegenerative – Type of Royalty Rate

Royalty Rates (n=6)					
CNS-Neurological/Neurodegenerative	# of Deals	Min	Median	Max	Mean
Clinical Stage In Progress					
Flat	1				
Discovery					
Tiered	1				
IND Track/Pre-IND					
Flat	4	2.0%	2.5%	5.5%	3.1%

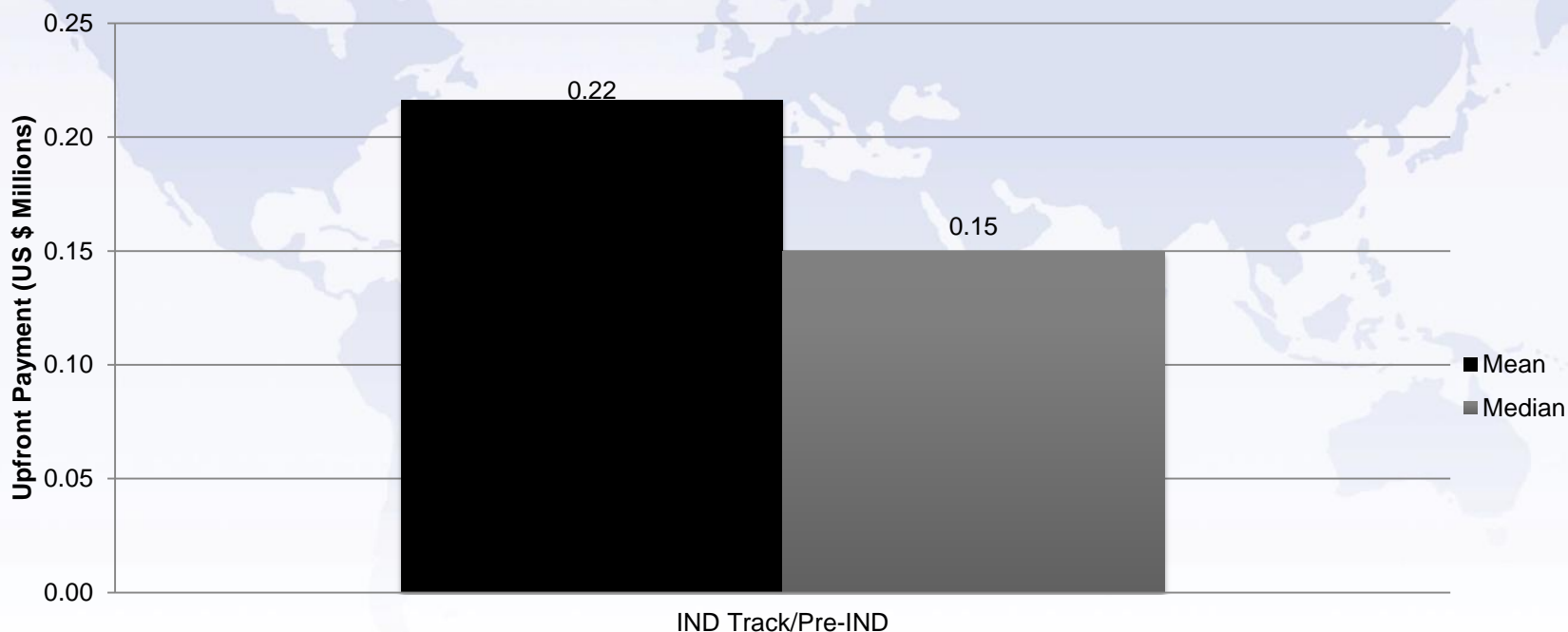


# Analysis of Therapeutic Areas

Case 1:19-cv-02533-MBS Document 240-24 Filed 07/14/21 Page 149 of 298

## CNS: Neurological/Neurodegenerative – Upfront Payments

**Mean and Median of Upfront Payments by Stage of Development**



IND Track/Pre-IND

$n=4$

n = number of deals

Accompanying data on following page.

**Stage of Development**



# Analysis of Therapeutic Areas

Case 1:19-cv-01253-WGV Document 2-1 Filed 04/14/21 Page 150 of 298

## *CNS: Neurological/Neurodegenerative – Upfront Payments*

Upfront Payments (n=5)					
CNS-Neurological/Neurodegenerative	# of Deals	Min	Median	Max	Mean
Discovery	1				
IND Track/Pre-IND	4	0.07	0.15	0.50	0.22

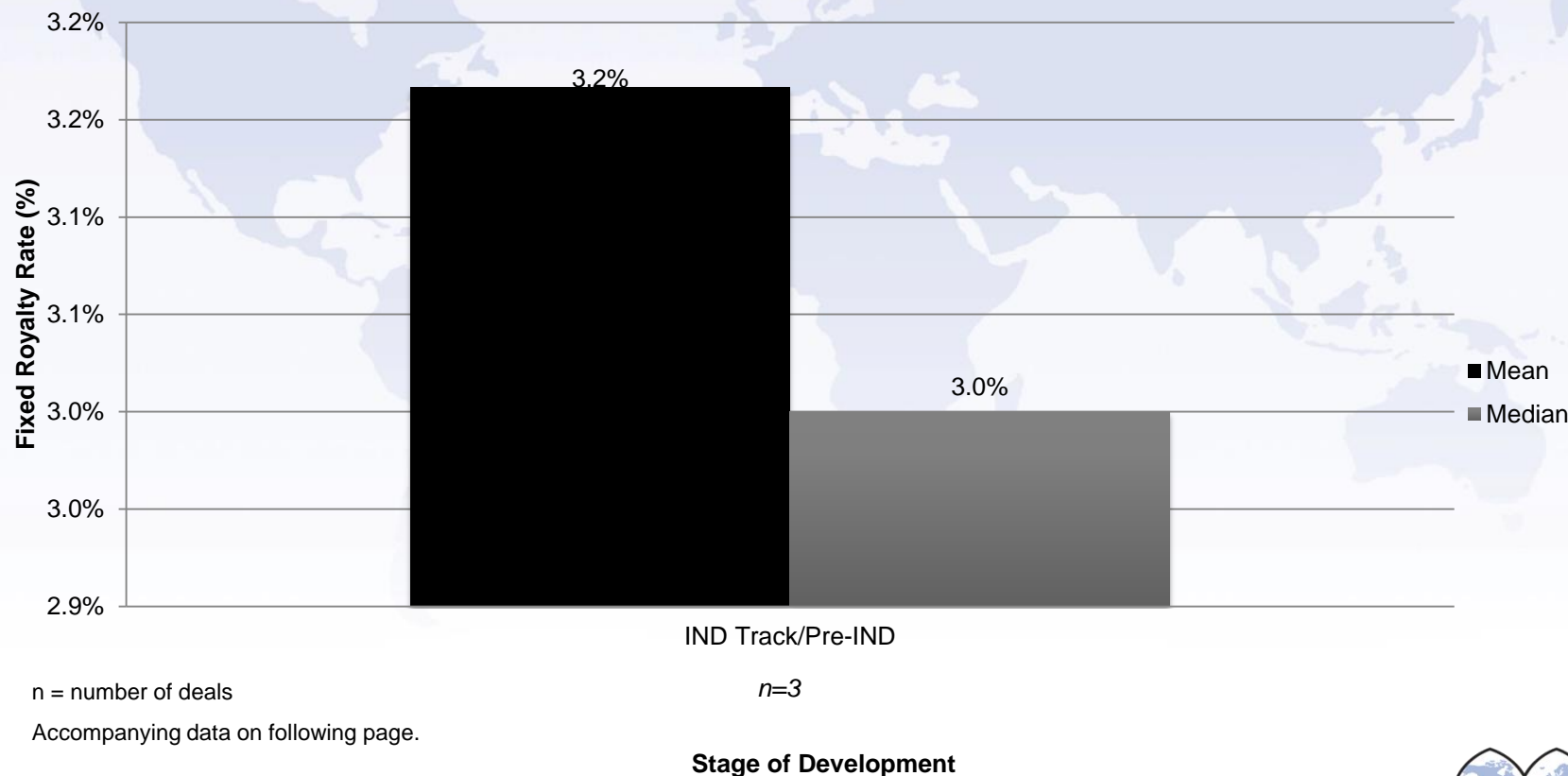


# Analysis of Therapeutic Areas

Case 1:19-cv-02533-MG Document 240-24 Filed 07/14/21 Page 151 of 298

## *Infectious Disease: Bacterial – Fixed Royalty Rates*

### Mean and Median of Fixed Royalty Rate by Stage of Development



# Analysis of Therapeutic Areas

Case 1:19-cv-01253-WBY Document 2-1 Filed 04/14/21 Page 152 of 298

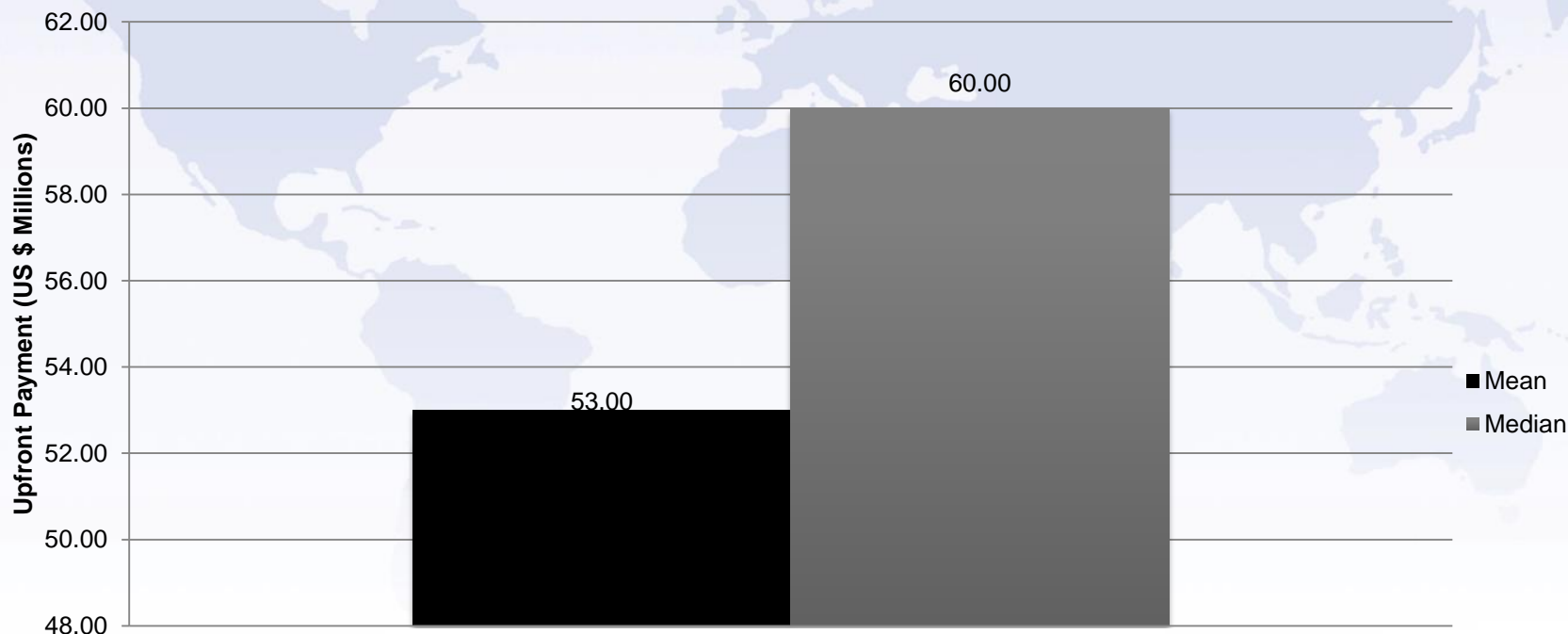
## *Infectious Disease: Bacterial – Type of Royalty Rate*

Royalty Rates (n=8)					
Infectious Disease-Bacterial	# of Deals	Min	Median	Max	Mean
Approved/Launched					
Flat	2				
No royalty component	1				
Tiered	1				
Discovery					
Tiered	1				
IND Track/Pre-IND					
Flat	3	2.5%	3.0%	4.0%	3.2%

# Analysis of Therapeutic Areas

## Metabolic/Endocrine – Upfront Payments

**Mean and Median of Upfront Payments by Stage of Development**



n = number of deals

Accompanying data on following page.

n=3

Stage of Development



# Analysis of Therapeutic Areas

## *Metabolic/Endocrine – Upfront Payments*

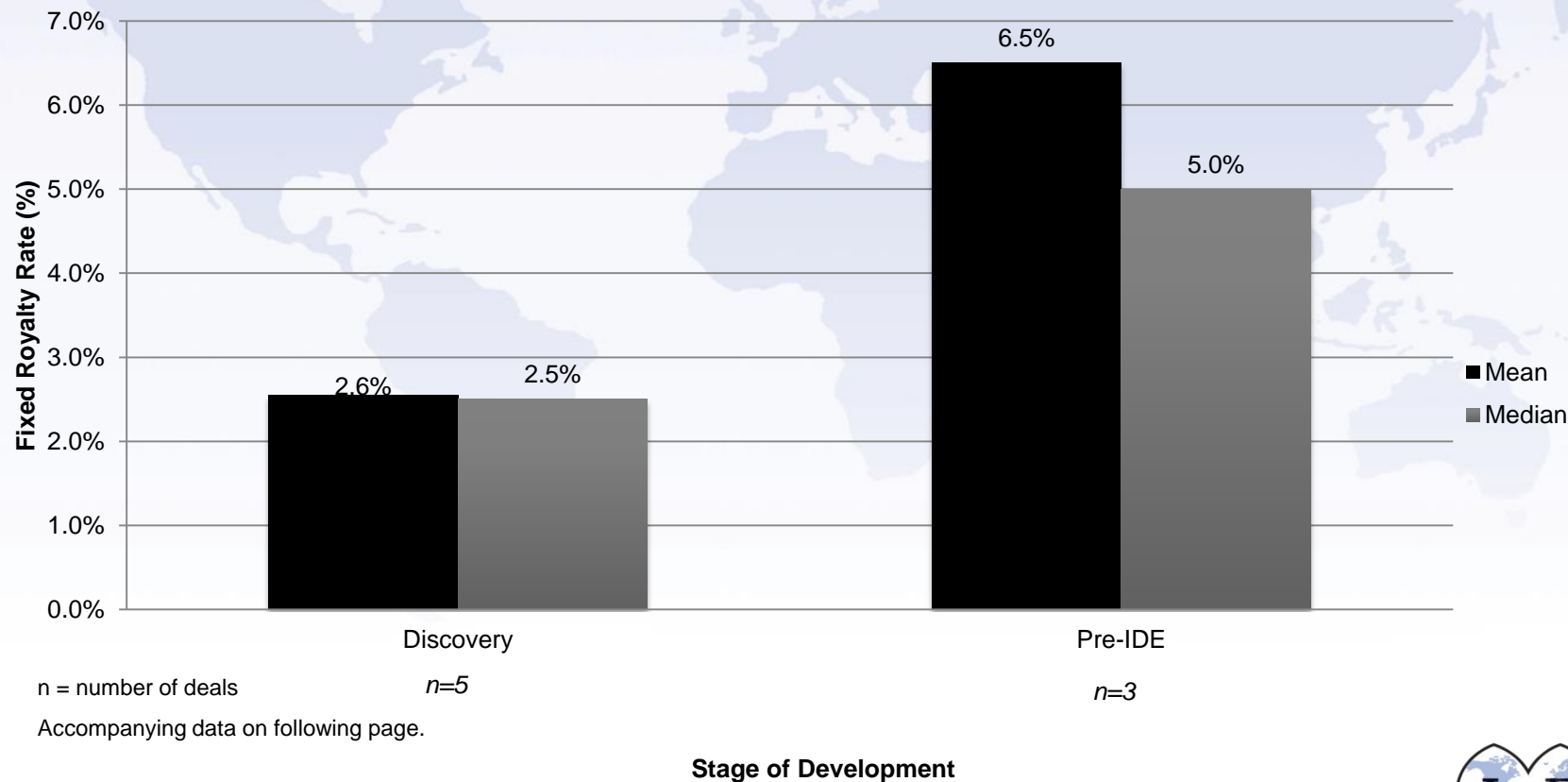
Upfront Payments (n=5)					
Metabolic/Endocrine	# of Deals	Min	Median	Max	Mean
Discovery	1				
IND Track/Pre-IND	3	5.00	60.00	94.00	53.00
Registration/510(k)/PMA (or equivalent) submitted	1				



# Analysis of Therapeutic Areas

## Oncology – Fixed Royalty Rates

**Mean and Median of Fixed Royalty Rate by Stage of Development**





# Analysis of Therapeutic Areas

## *Oncology – Type of Royalty Rate*

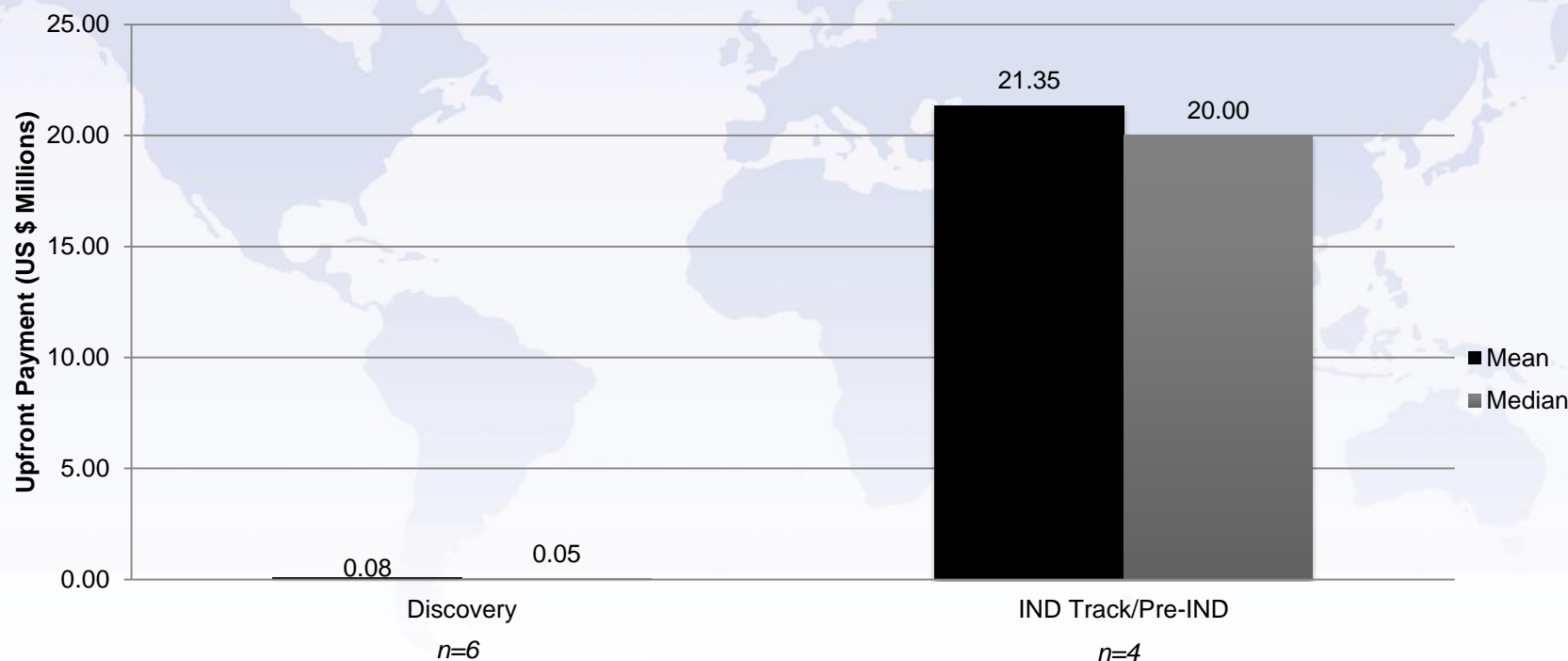
Royalty Rates (n=27)					
Oncology	# of Deals	Min	Median	Max	Mean
Discovery					
Flat	5	1.0%	2.5%	4.0%	2.6%
No royalty component	1				
Tiered	2				
IND Track/Pre-IND					
No royalty component	1				
Tiered	4				
Phase 1 (patients enrolling)					
Flat	1				
Tiered	1				
Phase 2 (completed)					
Flat	1				
Phase 2 (patients enrolling)					
Flat	1				
Phase 3 (patients enrolling)					
Tiered	2				
Pre-IDE					
Flat	3	4.5%	5.0%	10.0%	6.5%
Prototype					
Flat	2				
Registration/510(k)/PMA (or equivalent) submitted					
Flat	1				
Research Use Only					
No royalty component	1				
Tiered	1				



# Analysis of Therapeutic Areas

## Oncology – Upfront Payments

**Mean and Median of Upfront Payments by Stage of Development**



n = number of deals

Accompanying data on following page.

**Stage of Development**



# Analysis of Therapeutic Areas

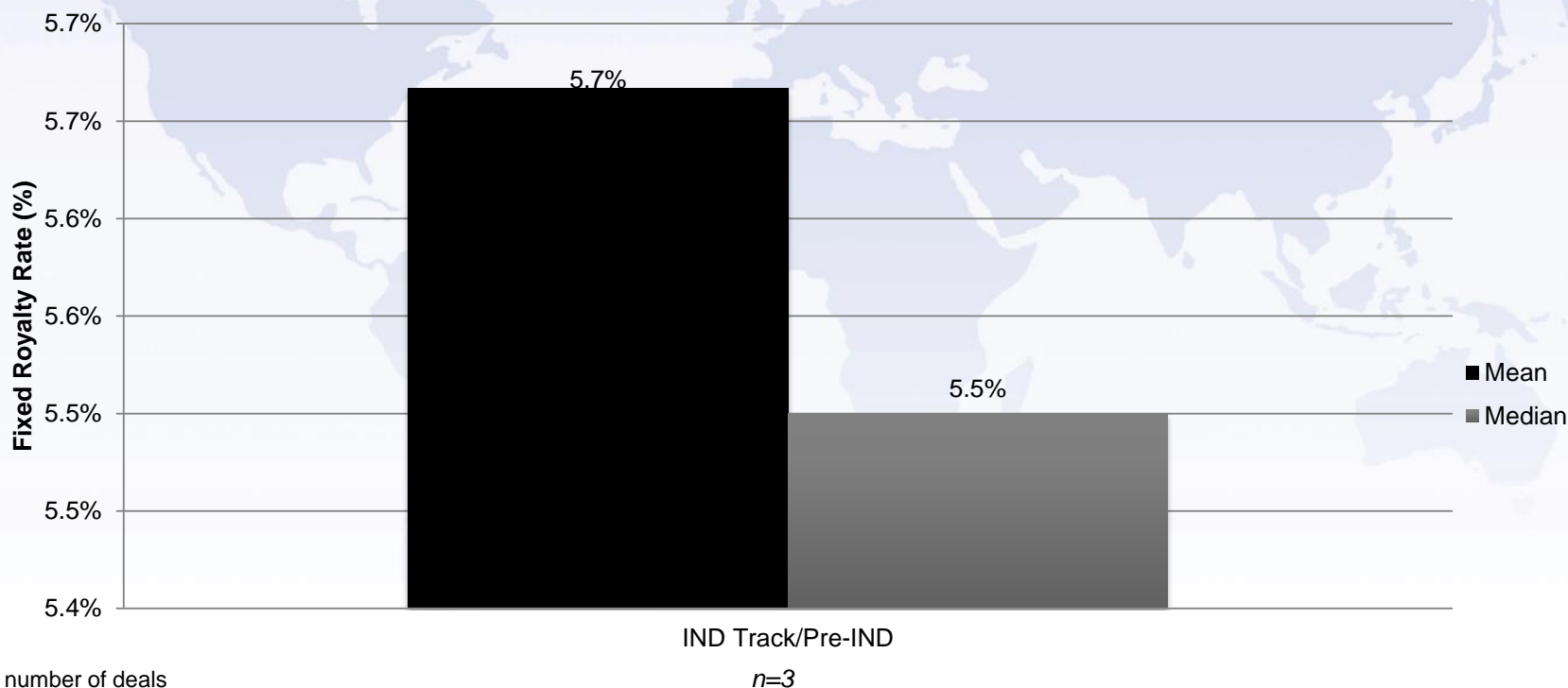
## Oncology – Upfront Payments

Upfront Payments (n=22)					
Oncology	# of Deals	Min	Median	Max	Mean
Discovery	6	0.01	0.05	0.21	0.08
IND Track/Pre-IND	4	0.90	20.00	44.50	21.35
Phase 1 (patients enrolling)	2				
Phase 2 (completed)	1				
Phase 3 (patients enrolling)	2				
Pre-IDE	2				
Prototype	2				
Registration/510(k)/PMA (or equivalent) submitted	1				
Research Use Only	2				

# Analysis of Therapeutic Areas

## *Ophthalmology – Fixed Royalty Rates*

**Mean and Median of Fixed Royalty Rate by Stage of Development**



n = number of deals

Accompanying data on following page.

Stage of Development



# Analysis of Therapeutic Areas

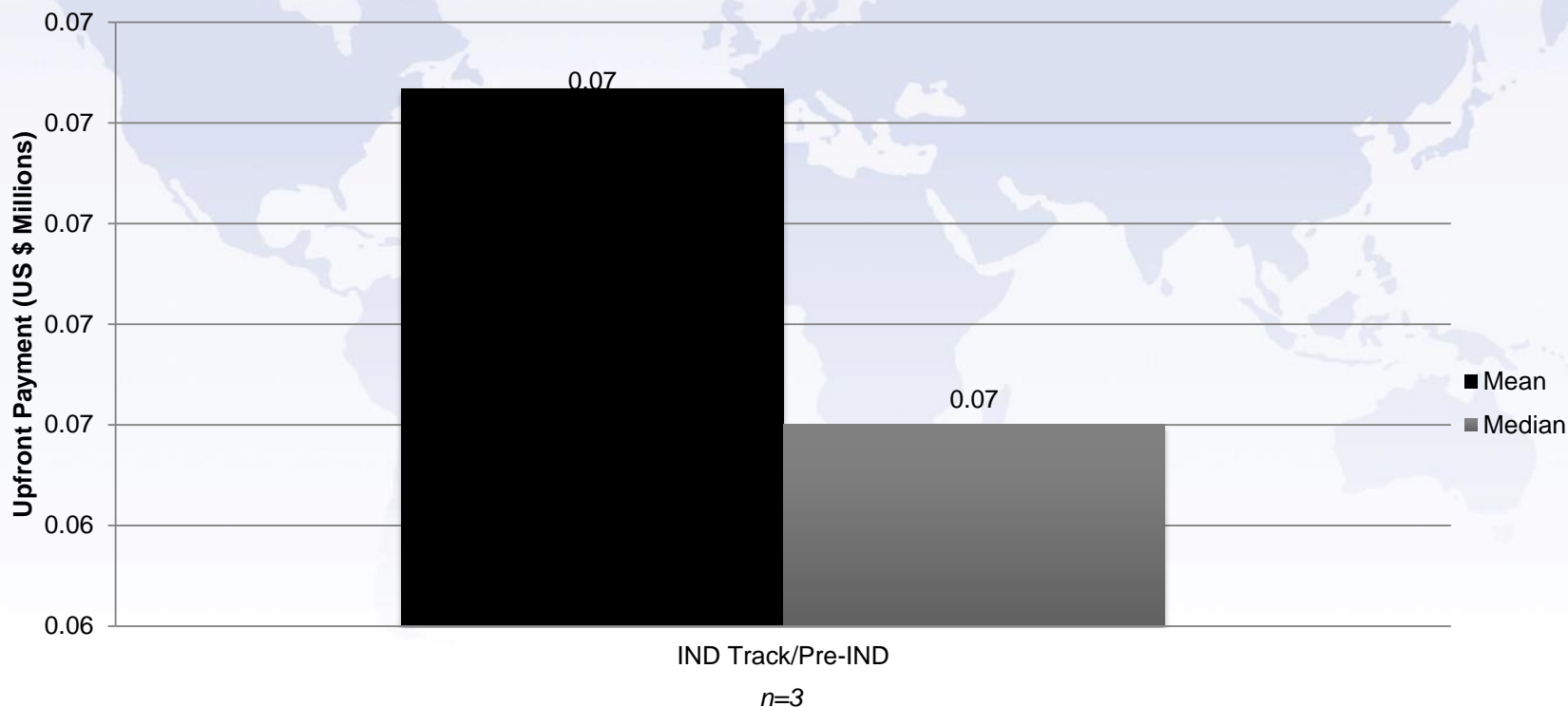
## *Ophthalmology – Type of Royalty Rate*

Royalty Rates (n=6)					
Ophthalmology	# of Deals	Min	Median	Max	Mean
Discovery					
Flat	2				
IND Track/Pre-IND					
Flat	3	5.5%	5.5%	6.0%	5.7%
Tiered	1				

# Analysis of Therapeutic Areas

## Ophthalmology – Upfront Payments

**Mean and Median of Upfront Payments by Stage of Development**



n = number of deals

Accompanying data on following page.

Stage of Development



# Analysis of Therapeutic Areas

## *Ophthalmology – Upfront Payments*

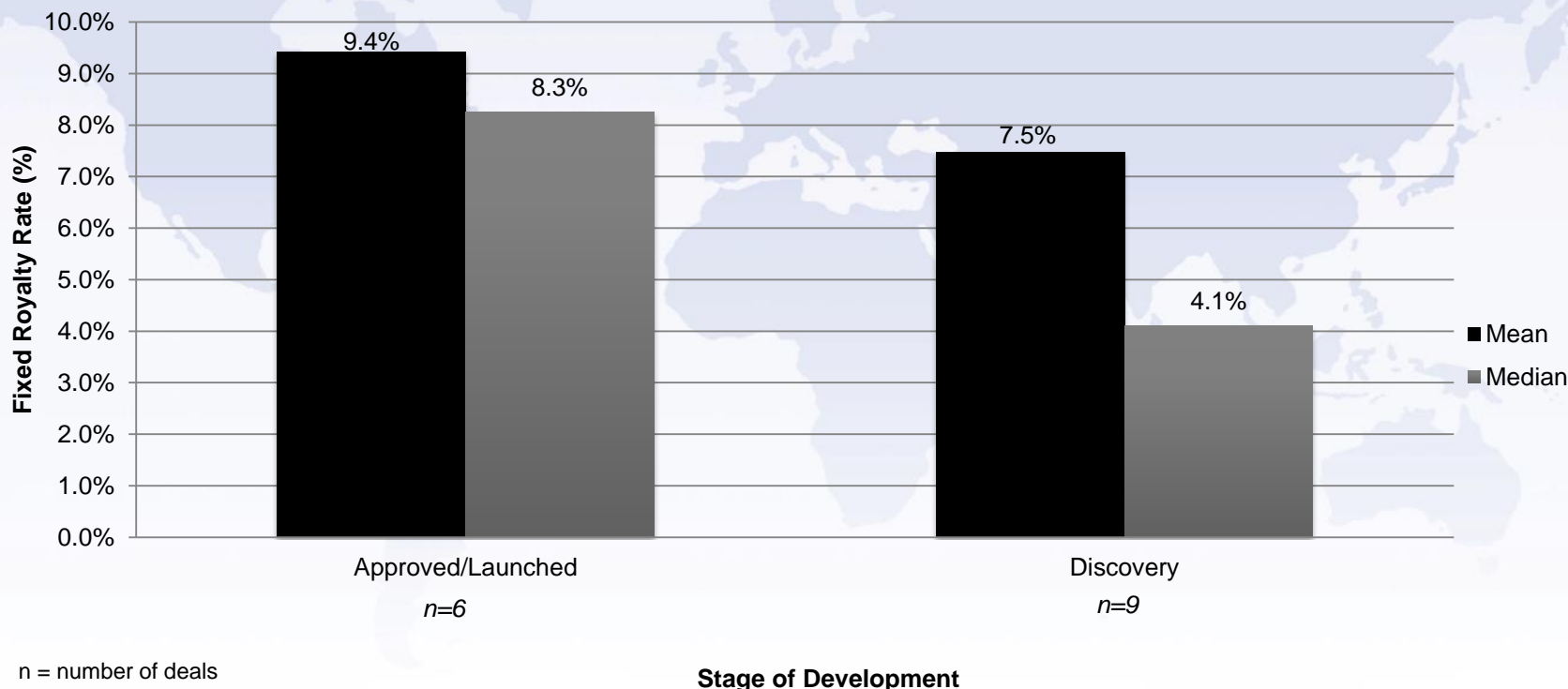
Upfront Payments (n=5)					
Ophthalmology	# of Deals	Min	Median	Max	Mean
Discovery	2				
IND Track/Pre-IND	3	0.07	0.07	0.08	0.07



# Analysis of Therapeutic Areas

## *Other\* – Fixed Royalty Rates*

**Mean and Median of Fixed Royalty Rate by Stage of Development**



\*Specified as: not a therapeutic or diagnostic, cardiovascular monitoring, research, Research product, Orthopedic, surgical - colon rectal surgeons, Dental, healthy choices, Skincare, Operational know-how; not technology based, Surgical/ENT, Allergy, Primary hyperoxaluria, Communication tool, multi, DNA analysis, holistic, all fields, BIODEFENSE, ALL AREAS, obstetrics, Emergency medicine, cystic fibrosis, NA



# Analysis of Therapeutic Areas

## *Other\* – Type of Royalty Rate*

Royalty Rates (n=28)					
Other (Please specify)	# of Deals	Min	Median	Max	Mean
Discovery					
Flat	9	2.0%	4.1%	30.0%	7.5%
No royalty component	1				
Final product in development (including manufacturing development)					
Flat	2				
IND Track/Pre-IND					
Flat	2				
Phase 1 (completed)					
Flat	1				
Phase 1 (patients enrolling)					
Flat	1				
Proof-of-concept completed					
No royalty component	1				
Tiered	1				
Prototype					
Flat	1				
Registered/NDA submitted					
Tiered	1				
Approved/Launched					
Flat	6	2.0%	8.3%	20.0%	9.4%
Tiered	2				

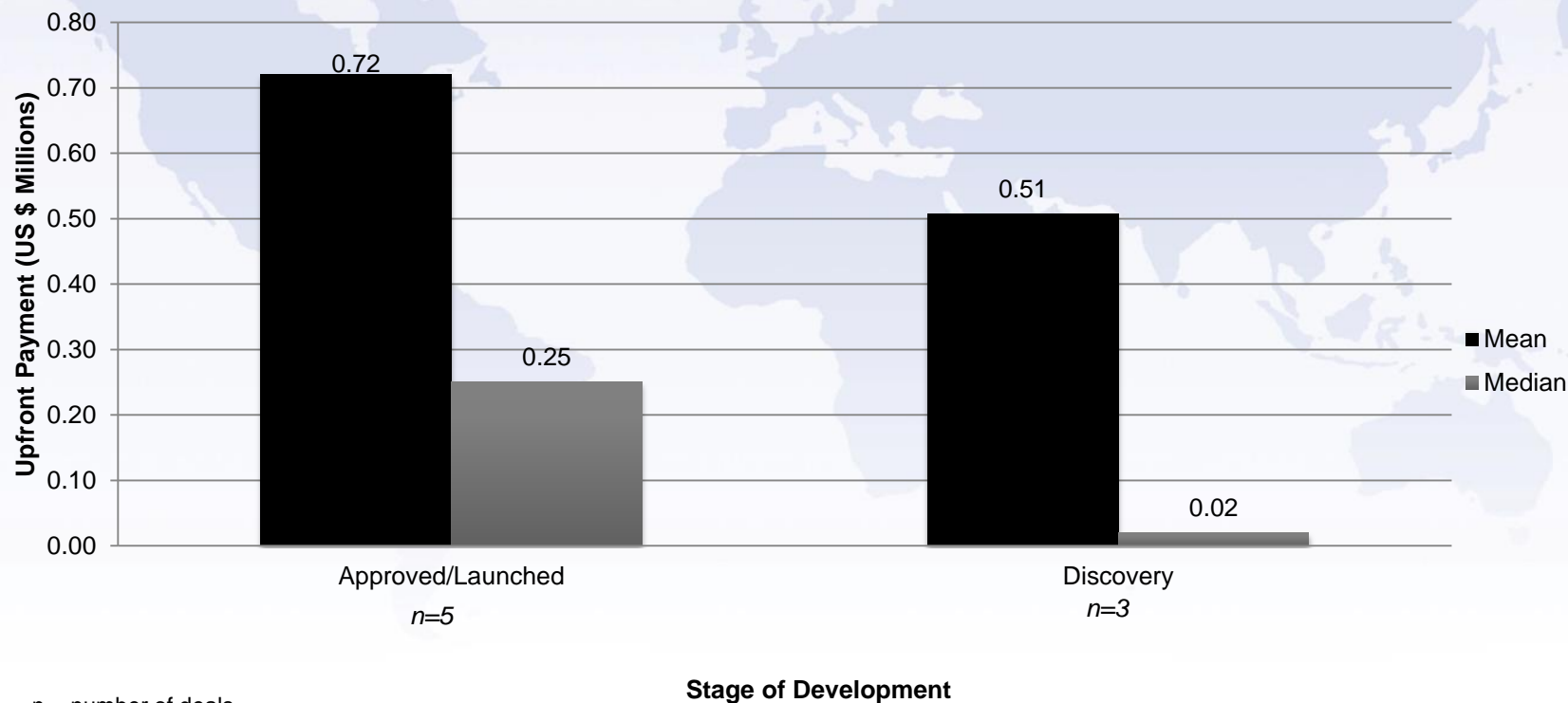
\*Specified as: not a therapeutic or diagnostic, cardiovascular monitoring, research, Research product, Orthopedic, surgical - colon rectal surgeons, Dental, healthy choices, Skincare, Operational know-how; not technology based, Surgical/ENT, Allergy, Primary hyperoxaluria, Communication tool, multi, DNA analysis, holistic, all fields, BIODEFENSE, ALL AREAS, obstetrics, Emergency medicine, cystic fibrosis, NA



# Analysis of Therapeutic Areas

## *Other\* – Upfront Payments*

**Mean and Median of Upfront Payments by Stage of Development**



Accompanying data on following page.

\*Specified as: research, surgical - colon rectal surgeons, Dental, healthy choices, Skincare, Operational know-how; not technology based, Primary hyperoxaluria, N/A, holistic, all fields, Emergency medicine,



# Analysis of Therapeutic Areas

## *Other\* – Upfront Payments*

Upfront Payments (n=11)					
Other (Please specify)	# of Deals	Min	Median	Max	Mean
Discovery	3	0.00	0.02	1.50	0.51
IND Track/Pre-IND	1				
Phase 1 (patients enrolling)	1				
Proof-of-concept completed	1				
Approved/Launched	5	0.05	0.25	2.10	0.72

\*Specified as: research, surgical - colon rectal surgeons, Dental, healthy choices, Skincare, Operational know-how; not technology based, Primary hyperoxaluria, N/A, holistic, all fields, Emergency medicine,



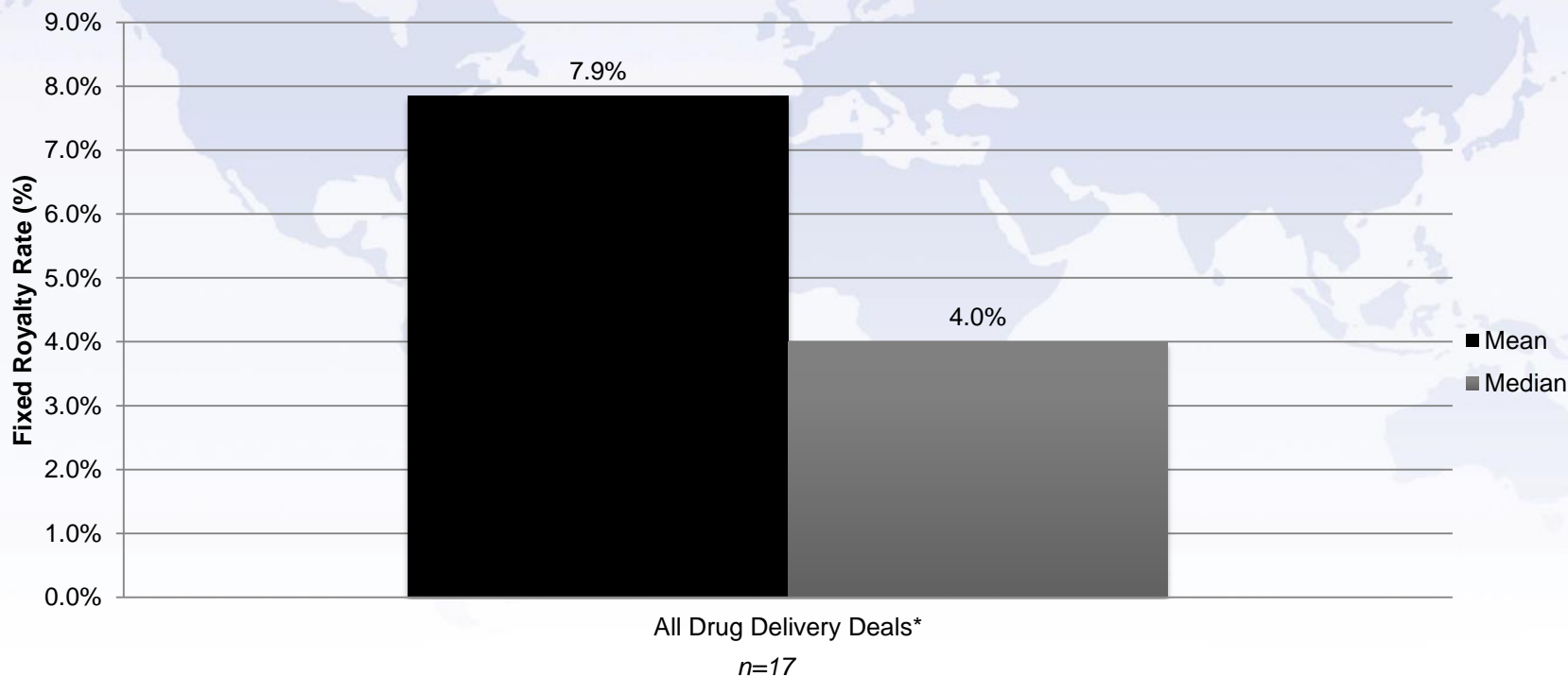
# Analysis of Drug Delivery Deals



# Analysis of Drug Delivery\* Deals

## - Fixed Royalty Rates

### Mean and Median of Fixed Royalty Rate



n = number of deals

Accompanying data on following page.

\* There was 1 Drug Delivery Platform Deal, 2 Drug Delivery Product Deals (Novel Label), 1 Drug Delivery Product Deals (Same Label), 6 Drug Platform Deals, 5 Drug Use Deals, and 2 Drug/Device Combination Product Deals.



# Analysis of Drug Delivery\* Deals

## - Fixed Royalty Rates

Fixed Royalty Rates (n=17)					
	# of Deals	Min	Median	Max	Mean
All Drug Delivery Deals*	17	1.0%	4.0%	20.0%	7.9%

\* There was 1 Drug Delivery Platform Deal, 2 Drug Delivery Product Deals (Novel Label), 1 Drug Delivery Product Deals (Same Label), 6 Drug Platform Deals, 5 Drug Use Deals, and 2 Drug/Device Combination Product Deals.





# Analysis of Drug Delivery\* Deals

## - Upfront Payments

### Mean and Median of Upfront Payments



n = number of deals

n=21

Accompanying data on following page.

\* There was 1 Drug Delivery Platform Deals, 1 Drug Delivery Product Deals (Novel Label), 1 Drug Delivery Product Deals (Same Label), 10 Drug Platform Deals, 7 Drug Use Deals, and 1 Drug/Device Combination Product Deals.



# Analysis of Drug Delivery\* Deals

## - Upfront Payments

Upfront Payments (n=21)					
	# of Deals	Min	Median	Max	Mean
All Drug Delivery Deals*	21	0.02	0.30	100.00	9.28

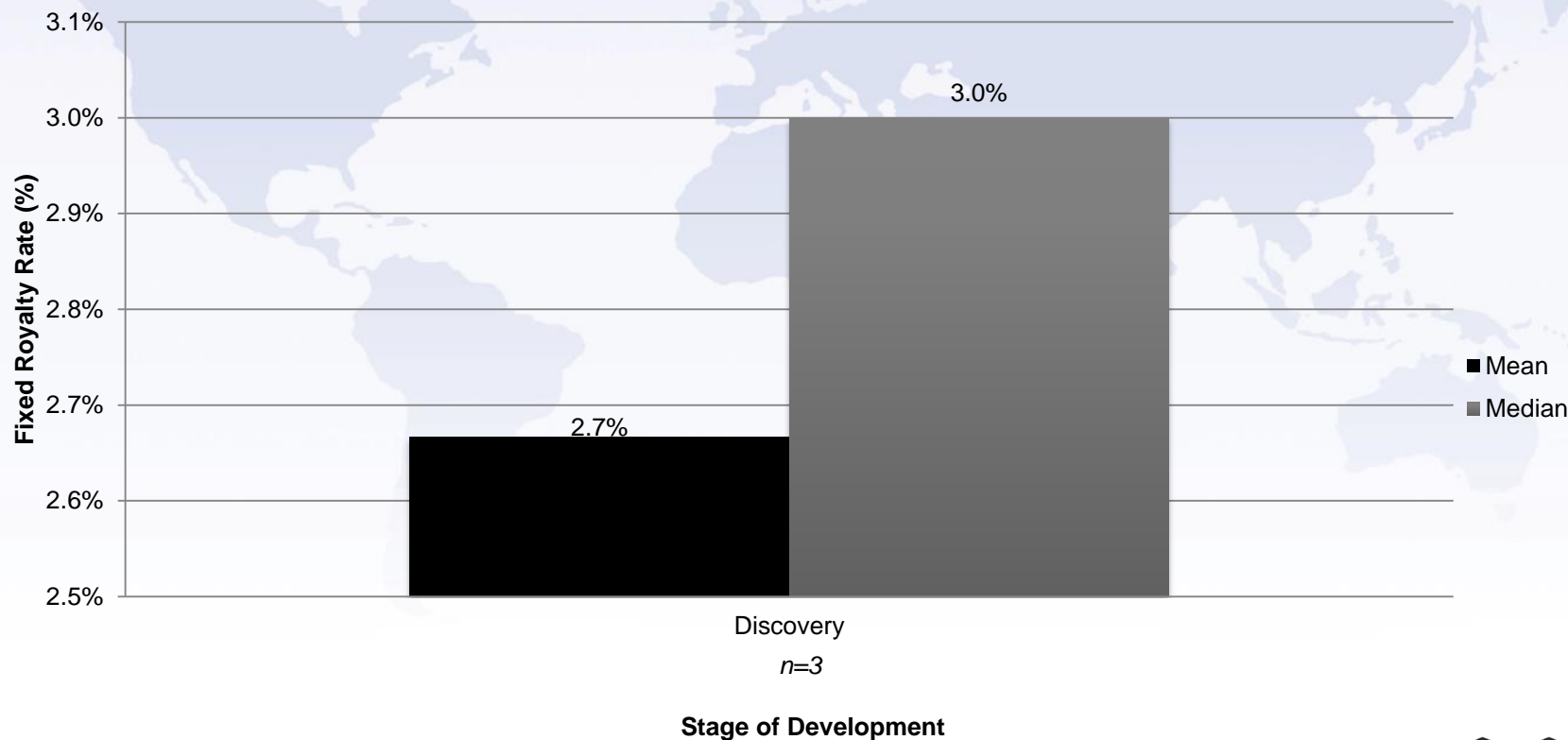
\* There was 1 Drug Delivery Platform Deals, 1 Drug Delivery Product Deals (Novel Label), 1 Drug Delivery Product Deals (Same Label), 10 Drug Platform Deals, 7 Drug Use Deals, and 1 Drug/Device Combination Product Deals.



# Analysis of Drug Delivery Categories

## *Drug Platform— Fixed Royalty Rates*

**Mean and Median of Fixed Royalty Rate by Stage of Development**



n = number of deals

Accompanying data on following page.



# Analysis of Drug Delivery Categories

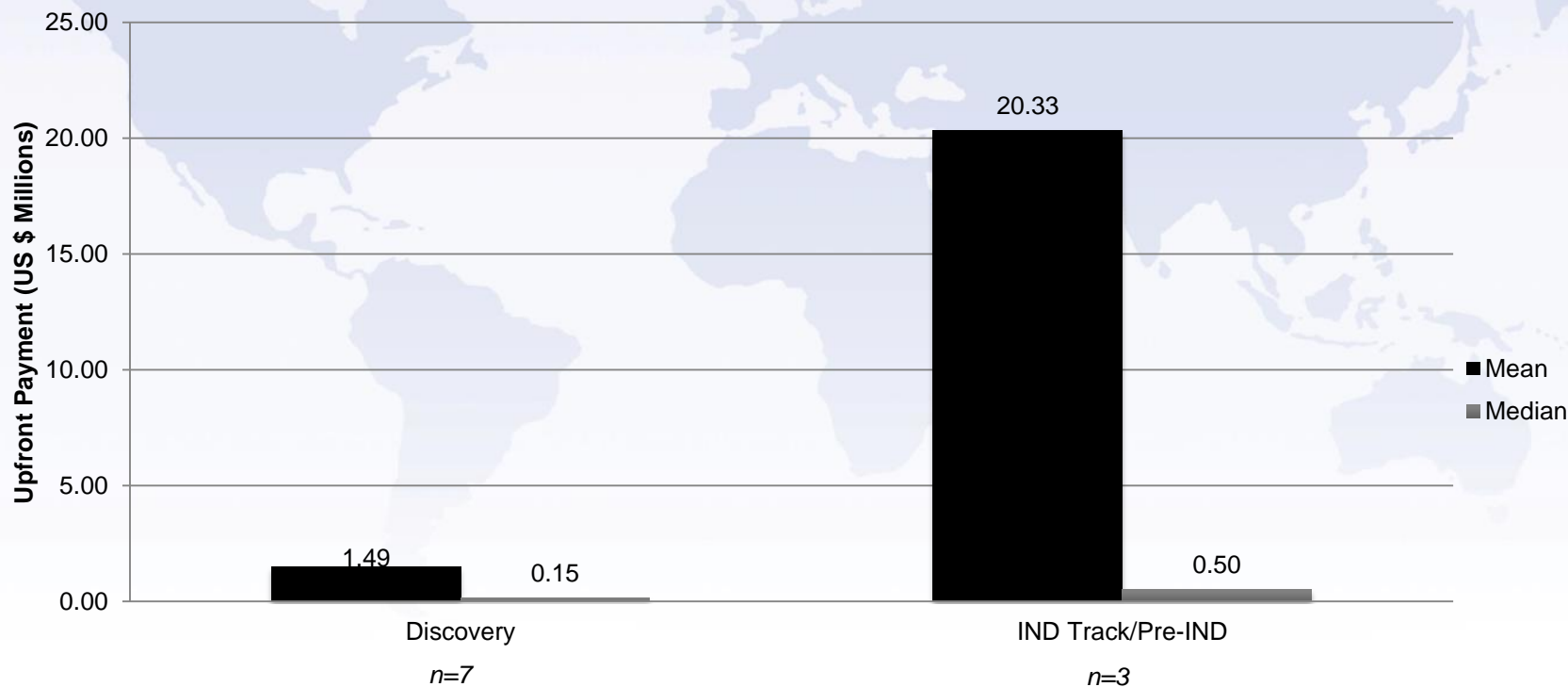
## *Drug Platform— Type of Royalty Rate*

Fixed Royalty Rates (n=12)					
Drug Platform Deal	# of Deals	Min	Median	Max	Mean
Discovery					
Flat	3	1.0%	3.0%	4.0%	2.7%
No royalty component	1				
Tiered	4				
IND Track/Pre-IND					
Flat	2				
Tiered	1				
Phase 1 (completed)					
Flat	1				

# Analysis of Drug Delivery Categories

## *Drug Platform— Upfront Payments*

**Mean and Median of Upfront Payments by Stage of Development**



n = number of deals

Accompanying data on following page.



# Analysis of Drug Delivery Categories

## *Drug Platform– Upfront Payments*

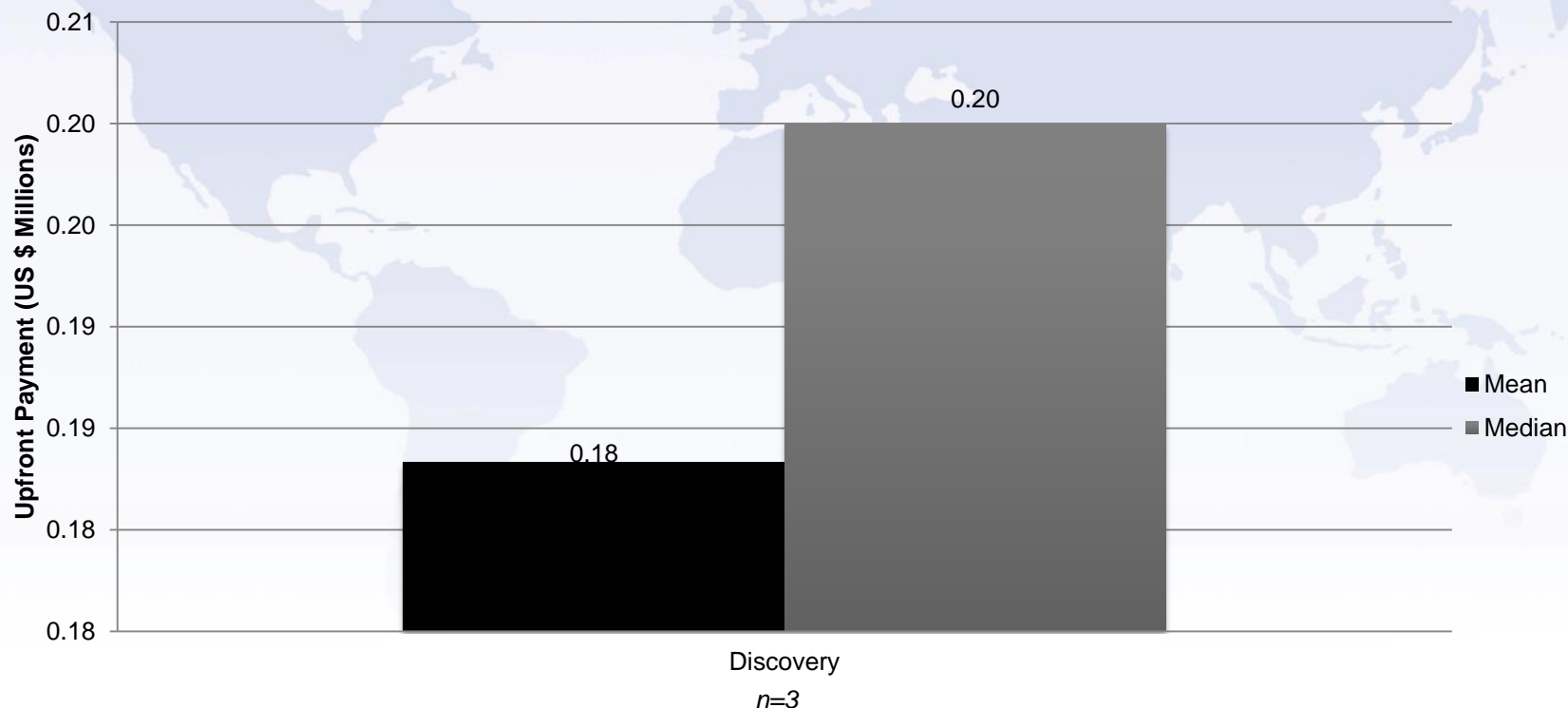
Upfront Payments (n=10)					
Drug Platform Deal	# of Deals	Min	Median	Max	Mean
Discovery	7	0.02	0.15	7.00	1.49
IND Track/Pre-IND	3	0.50	0.50	60.00	20.33



# Analysis of Drug Delivery Categories

## *Drug Use – Upfront Payments*

**Mean and Median of Upfront Payments by Stage of Development**



n = number of deals

Accompanying data on following page.

**Stage of Development**





# Analysis of Drug Delivery Categories

## *Drug Use – Upfront Payments*

Upfront Payments (n=7)					
Drug Use Deal	# of Deals	Min	Median	Max	Mean
Discovery	3	0.05	0.20	0.30	0.18
IND Track/Pre-IND	2				
Phase 1 (patients enrolling)	1				
Phase 2 (completed)	1				

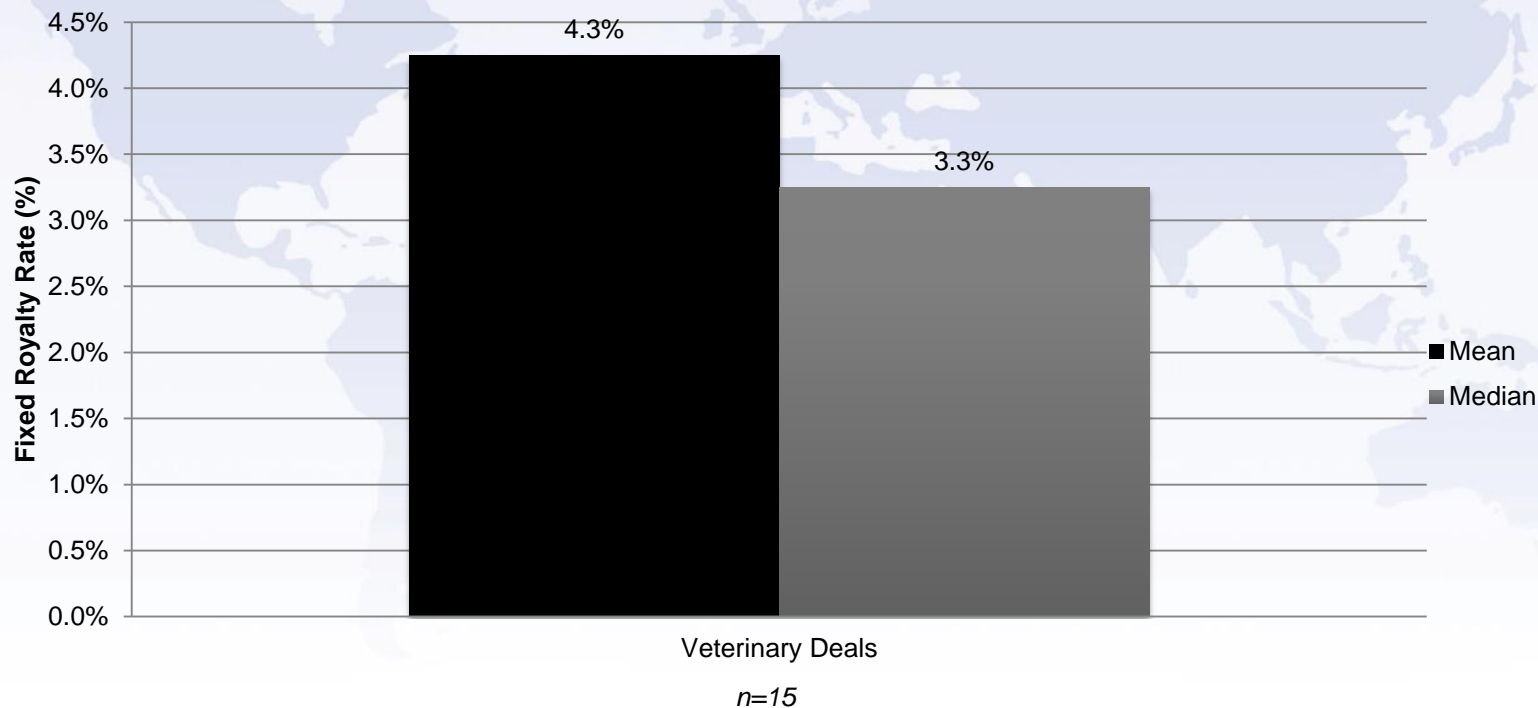
# Analysis of Veterinary Deals



# Analysis of Veterinary Deals

## – Fixed Royalty Rates

**Mean and Median of Fixed Royalty Rates**



n = number of deals

Accompanying data on following page.



# Analysis of Veterinary Deals

## – *Fixed Royalty Rates*

Fixed Royalty Rates (n=15)					
	# of Deals	Min	Median	Max	Mean
<b>Veterinary Deals</b>	15	2.0%	3.3%	15.0%	4.3%



# Analysis of Veterinary Deals

## – Upfront Payments

Mean and Median of Upfront Payments



n = number of deals

Accompanying data on following page.



# Analysis of Veterinary Deals

## – Upfront Payments

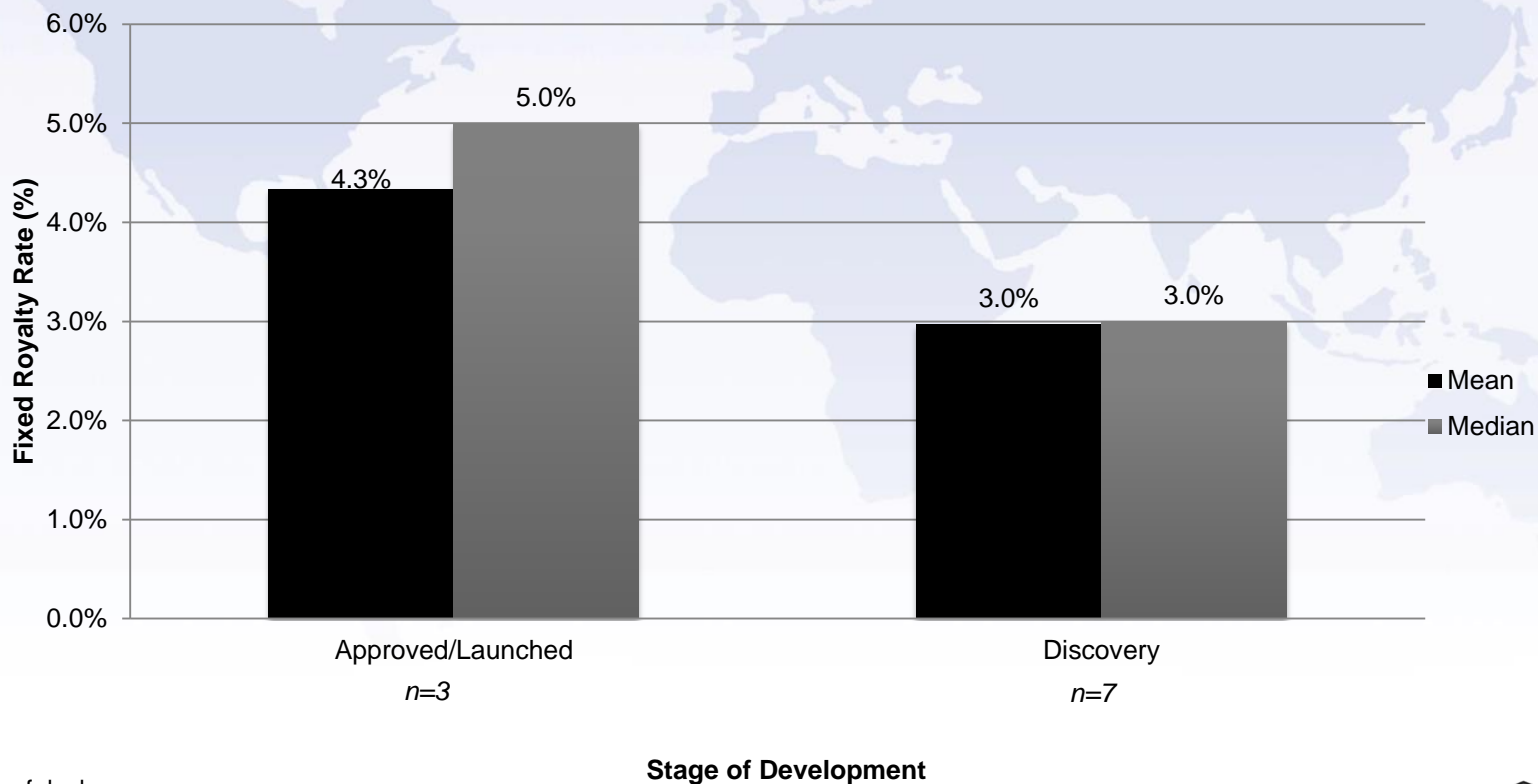
Upfront Payments (n=11)					
	# of Deals	Min	Median	Max	Mean
<b>Veterinary Deals</b>	11	0.03	0.21	7.00	1.32



# Analysis of Veterinary Deals

## – Fixed Royalty Rates

**Mean and Median of Fixed Royalty Rates by Stage of Development**



n = number of deals

Accompanying data on following page.





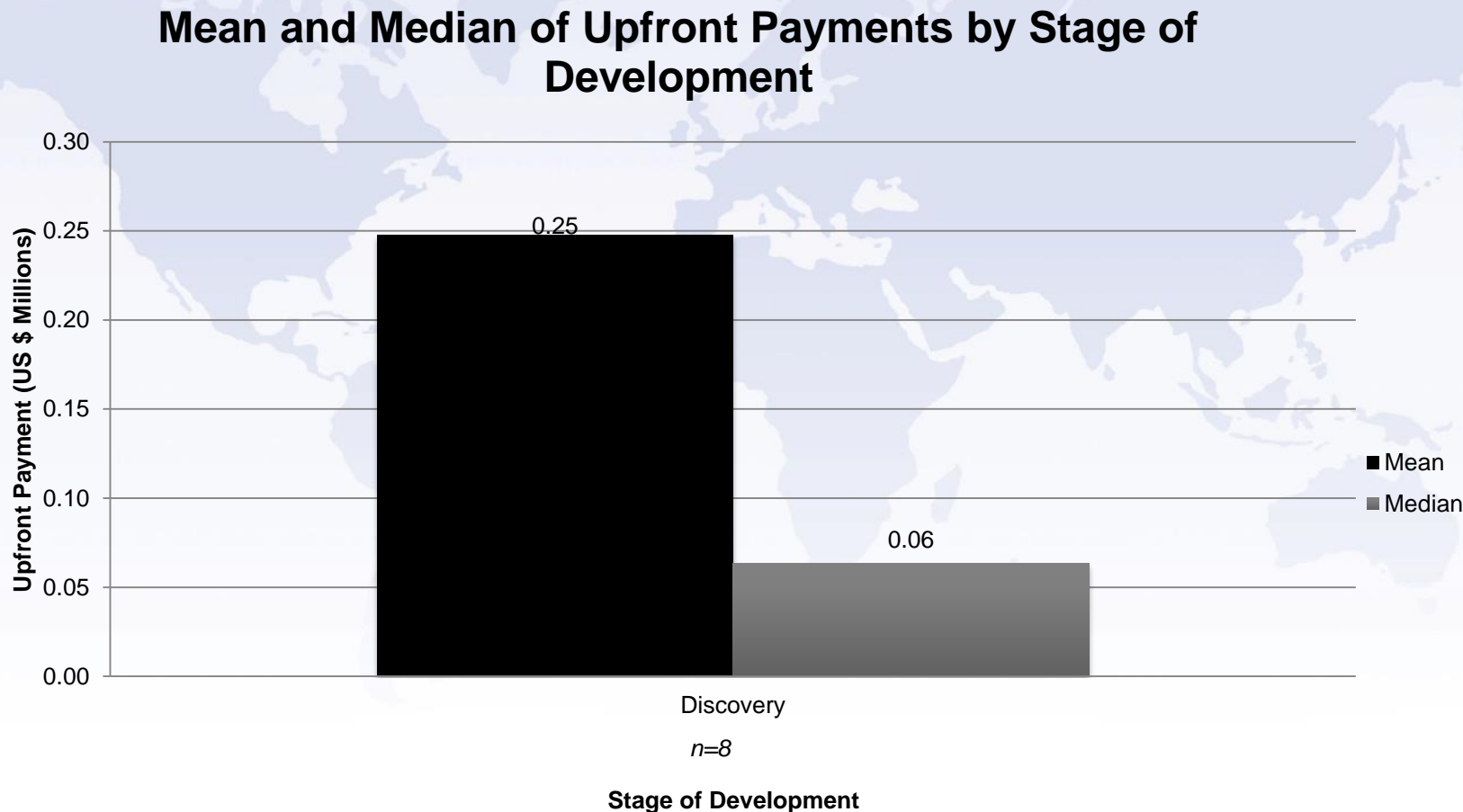
# Analysis of Veterinary Deals

## – Type of Royalty Rate

Fixed Royalty Rates (n=15)					
Veterinary Deals	# of Deals	Min	Median	Max	Mean
Approved/Launched					
Flat	3	3.0%	5.0%	5.0%	4.3%
Tiered					
Discovery					
Flat	7	2.0%	3.0%	4.0%	3.0%
Tiered					
IND Track/Pre-IND					
Flat	2				
Phase 2 (completed)					
Flat	1				
Pre-IDE					
Flat	1				
Final product in development (including manufacturing development)					
Flat	1				

# Analysis of Veterinary Deals

## – Upfront Payments



n = number of deals

Accompanying data on following page.



# Analysis of Veterinary Deals

## – Upfront Payments

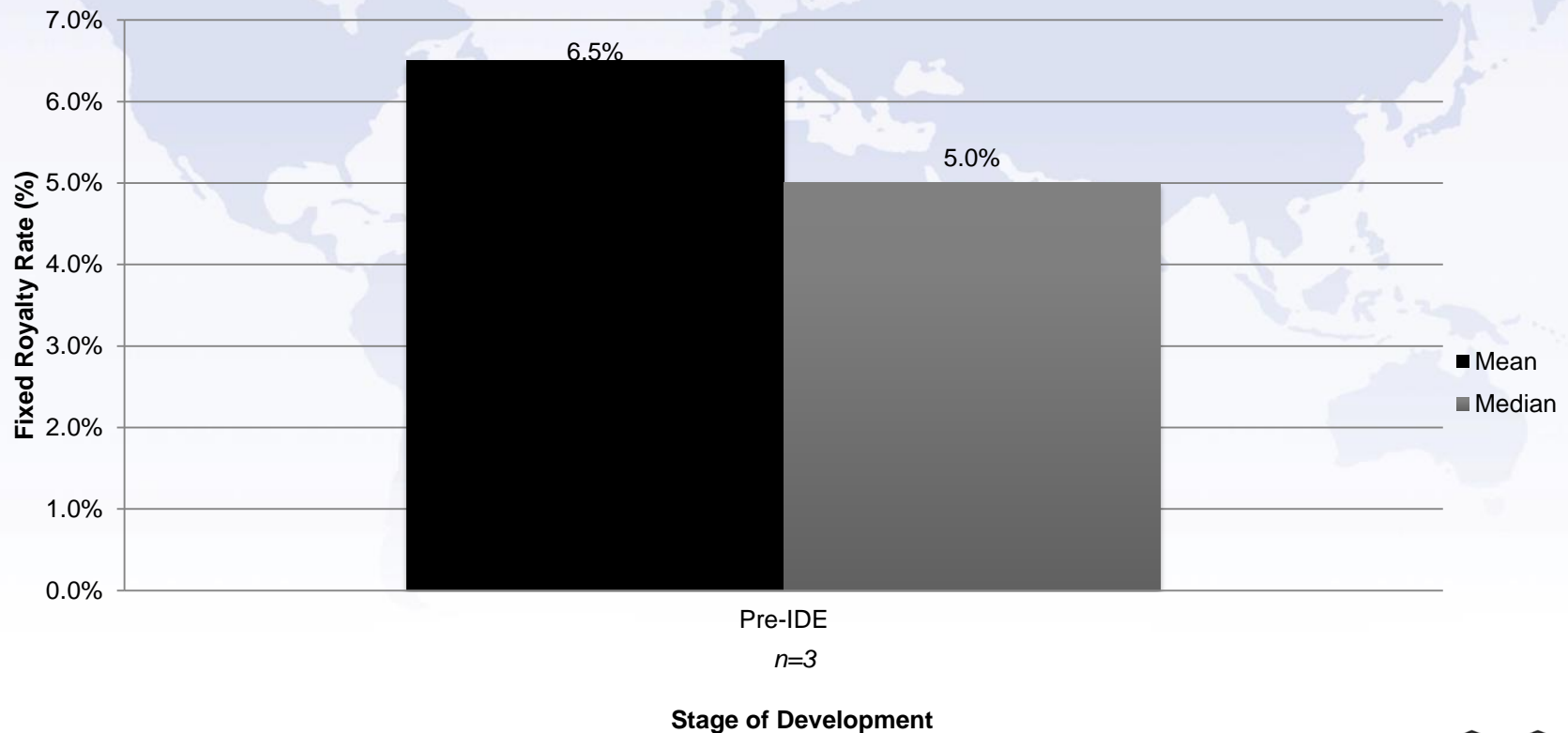
Upfront Payments (n=11)					
Veterinary Deals	# of Deals	Min	Median	Max	Mean
Approved/Launched	2				
Discovery	8	0.03	0.06	1.25	0.25
IND Track/Pre-IND	1				

# Miscellaneous Analyses



# In Vitro Diagnostics – *Fixed Royalty Rates*

**Mean and Median of Fixed Royalty Rate by Stage of Development**



n = number of deals

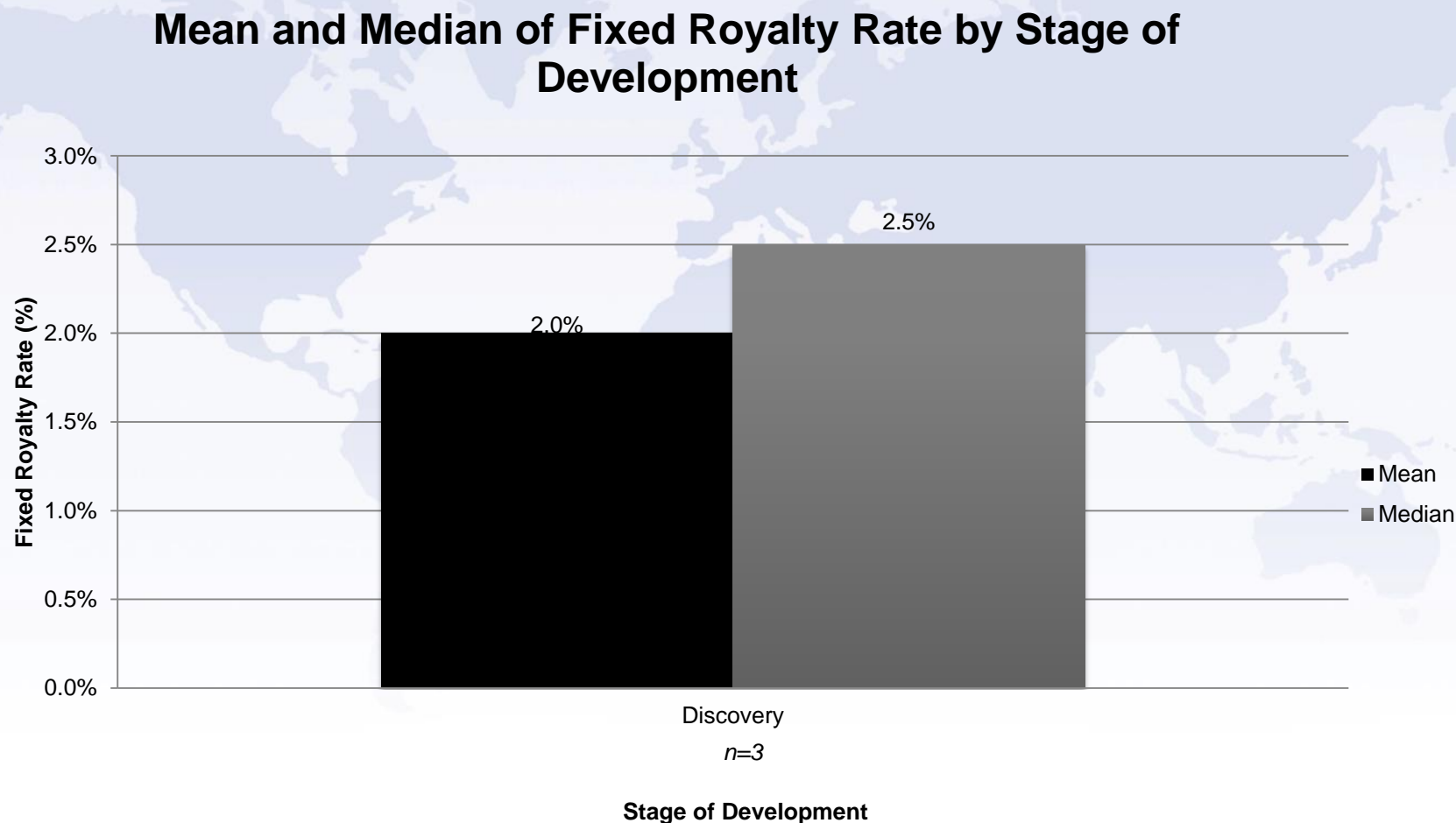
Accompanying data on following page.



# In Vitro Diagnostics – *Type of Royalty Rates*

Fixed Royalty Rates (n=8)					
In Vitro Diagnostics Deal	# of Deals	Min	Median	Max	Mean
Pre-IDE					
Flat	3	4.5%	5.0%	10.0%	6.5%
Research Use Only					
Flat	1				
No royalty component	1				
Tiered	1				
Registration/510(k)/PMA (or equivalent) submitted					
Flat	2				

# In Vivo Diagnostics – *Fixed Royalty Rates*



n = number of deals

Accompanying data on following page.





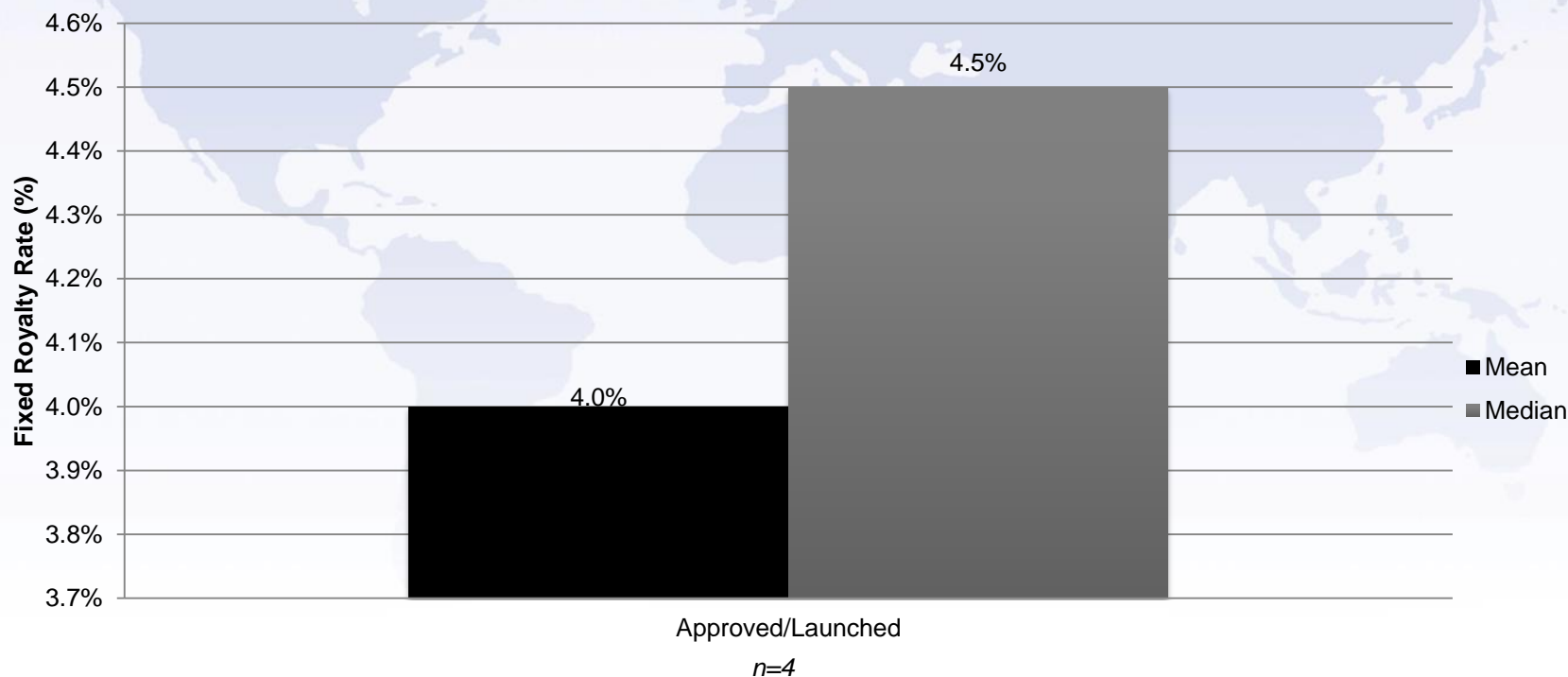
# In Vivo Diagnostics – *Type of Royalty Rates*

Fixed Royalty Rates (n=3)					
In Vivo Diagnostics Deal	# of Deals	Min	Median	Max	Mean
Discovery					
Flat	3	1.0%	2.5%	2.5%	2.0%



# Marketed Branded Product – *Fixed Royalty Rates*

**Mean and Median of Fixed Royalty Rate by Stage of Development**



n = number of deals

Accompanying data on following page.

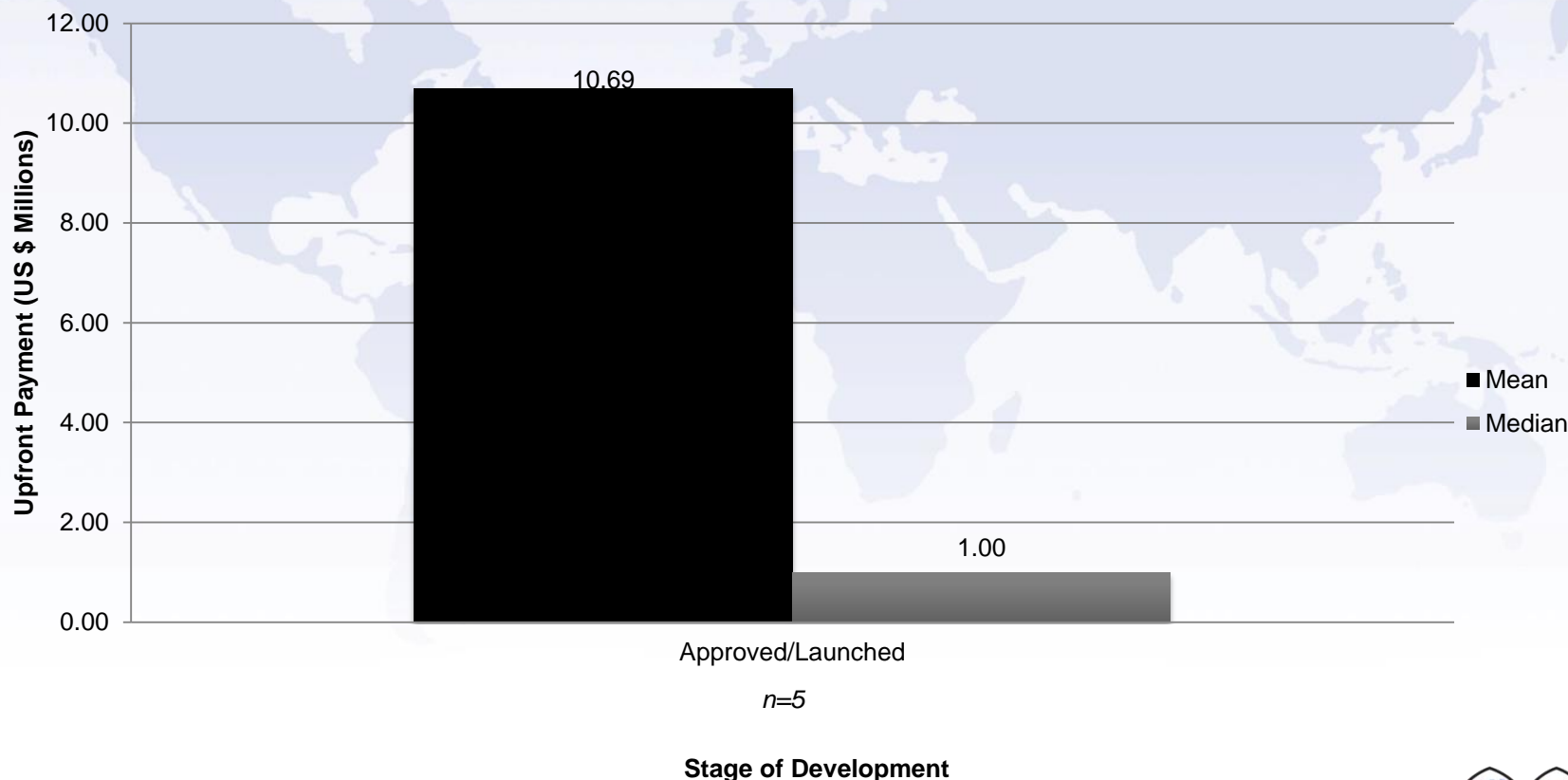


# Marketed Branded Product – *Type of Royalty Rate*

Fixed Royalty Rates (n=9)					
Marketed Branded Product Deal	# of Deals	Min	Median	Max	Mean
Approved/Launched					
Flat	4	2.0%	4.5%	5.0%	4.0%
No royalty component	1				
Tiered	2				
Registered/NDA submitted					
No royalty component	1				
Tiered	1				

# Marketed Branded Product – *Upfront* Payments

## Mean and Median of Upfront Payments by Stage of Development



n = number of deals

Accompanying data on following page.



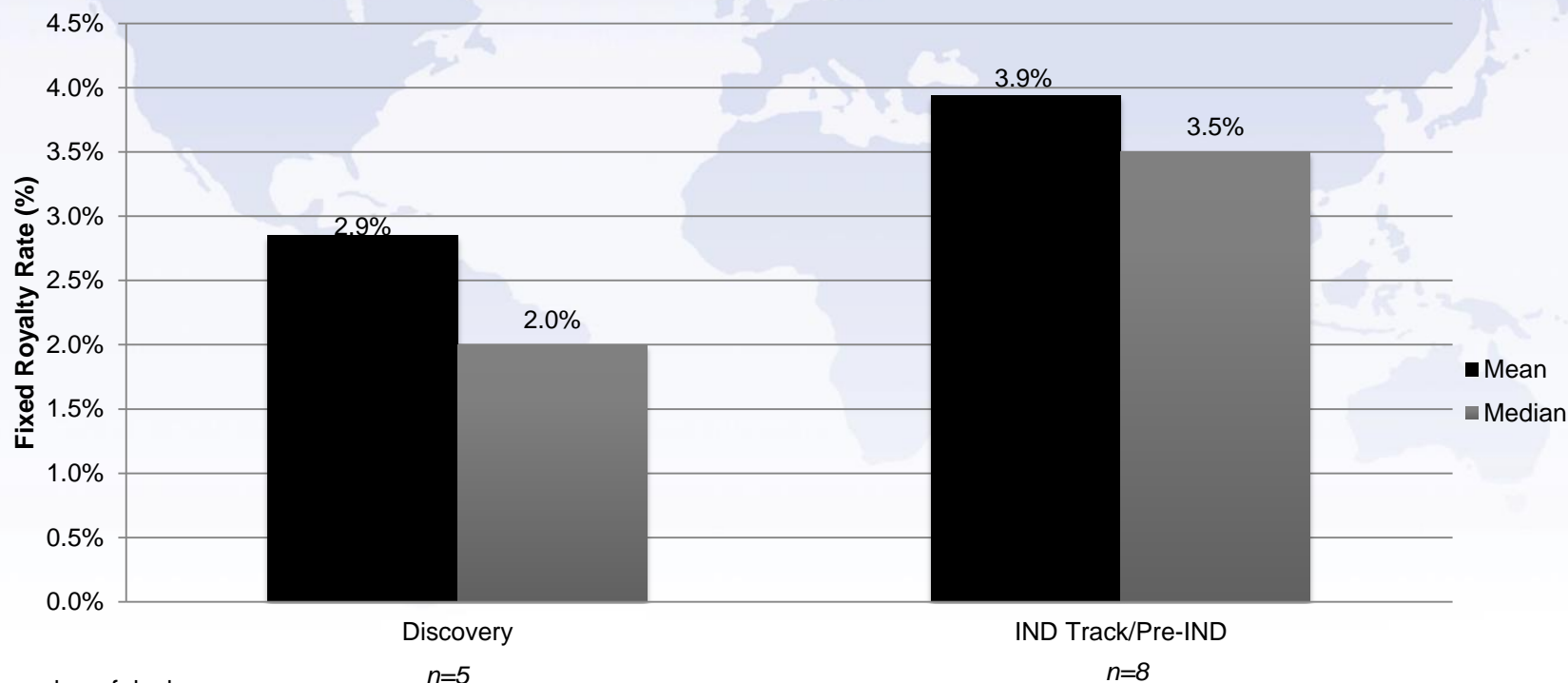
# Marketed Branded Product – *Upfront Payments*

Upfront Payments (n=7)					
Marketed Branded Product Deal	# of Deals	Min	Median	Max	Mean
Approved/Launched	5	0.20	1.00	45.00	10.69
Registered/NDA submitted	2				



# New Chemical Entity— *Fixed Royalty Rates*

**Mean and Median of Fixed Royalty Rate by Stage of Development**



n = number of deals

Accompanying data on following page.

**Stage of Development**



# New Chemical Entity– *Type of Royalty Rate*

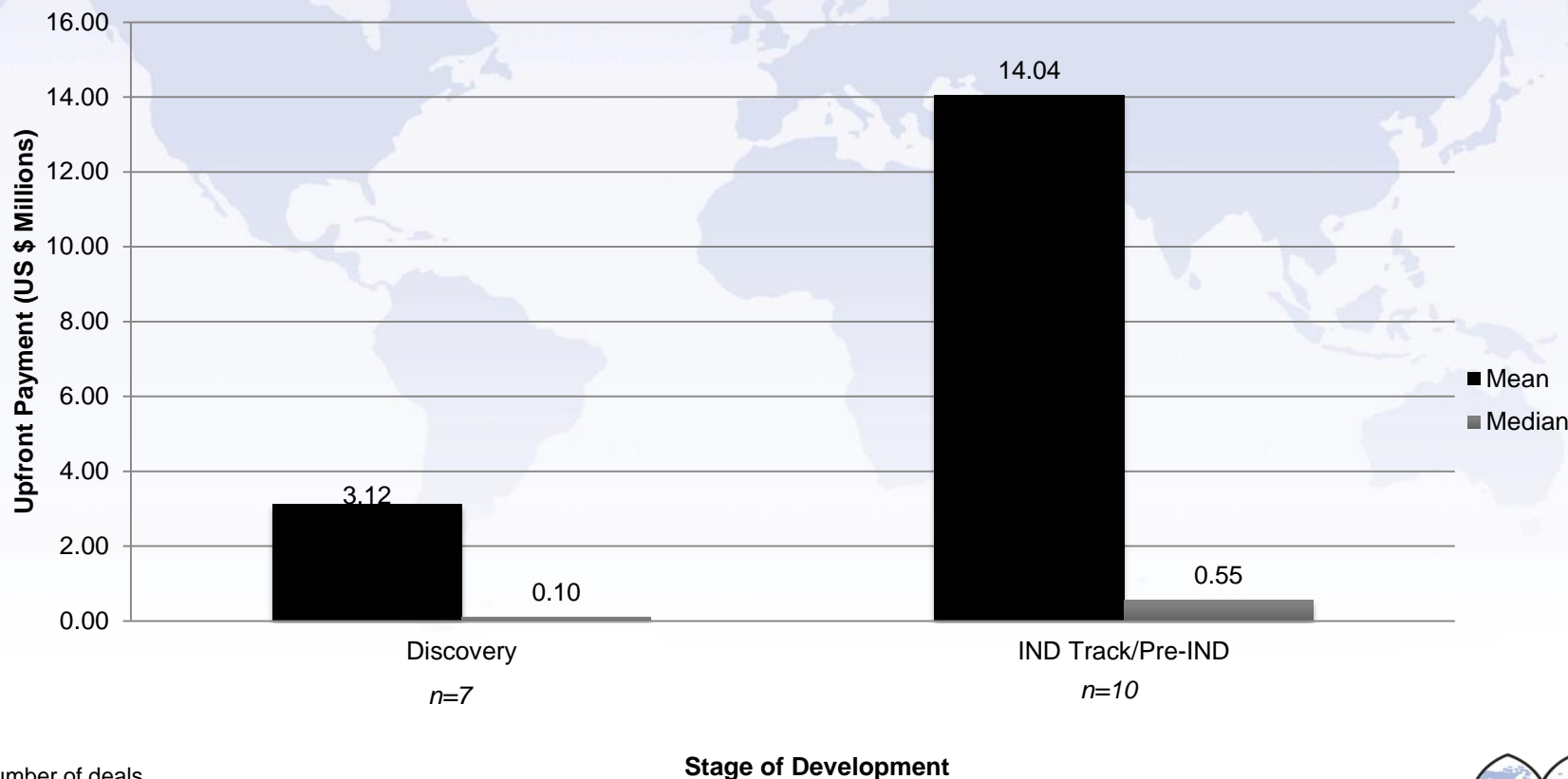
Fixed Royalty Rates (n=31)					
New Chemical Entity Deal	# of Deals	Min	Media n	Max	Mean
Discovery					
Flat	5	2.0%	2.0%	5.0%	2.9%
Tiered	4				
IND Filed					
Flat	1				
IND Track/Pre-IND					
Flat	8	2.0%	3.5%	5.5%	3.9%
Tiered	6				
Phase 1 (completed)					
Tiered	1				
Phase 1 (patients enrolling)					
Tiered	1				
Phase 2 (completed)					
Tiered	1				
Phase 2 (patients enrolling)					
Flat	1				
Tiered	1				
Phase 3 (patients enrolling)					
Tiered	2				





# New Chemical Entity– *Upfront Payments*

## Mean and Median of Upfront Payments by Stage of Development



n = number of deals

Accompanying data on following page.

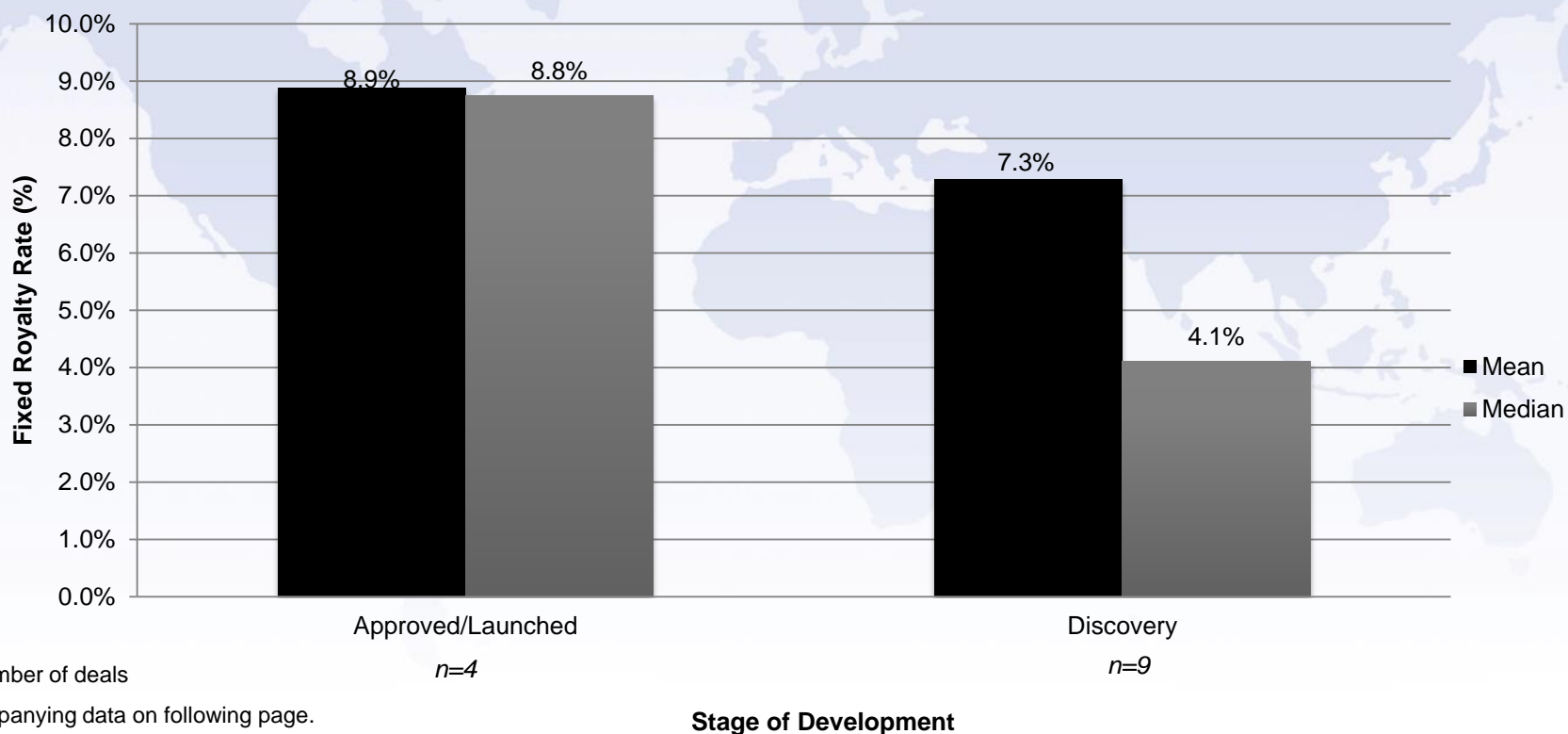


# New Chemical Entity– *Upfront Payments*

Upfront Payments (n=23)					
New Chemical Entity Deal	# of Deals	Min	Median	Max	Mean
Discovery	7	0.05	0.10	20.00	3.12
IND Filed	1				
IND Track/Pre-IND	10	0.07	0.55	94.00	14.04
Phase 1 (patients enrolling)	1				
Phase 2 (completed)	1				
Phase 2 (patients enrolling)	1				
Phase 3 (patients enrolling)	2				

# Other\* – Fixed Royalty Rates

## Mean and Median of Fixed Royalty Rate by Stage of Development



\*Specified as: unique chemical compound, Devise to monitor cardiovascular health, Neuroimaging software diagnostic tool, biomedical research reagent, Medical Device, develop dental orthotics, Health App, To provide a biosciences start-up with research data and DNA samples in four disease areas, Device, Heath Care operational know-how transfer, API Production, NA, New Biological Entity, New Biological Entity, Access to information on how a drug in development affects proprietary models, Healthcare IT communication tool, proprietary material license, Healthcare operational know-how, BIOLOGICAL SENSOR, Software, Surgical device, Outlicense, Gene Editing



# Other\* – Type of Royalty Rate

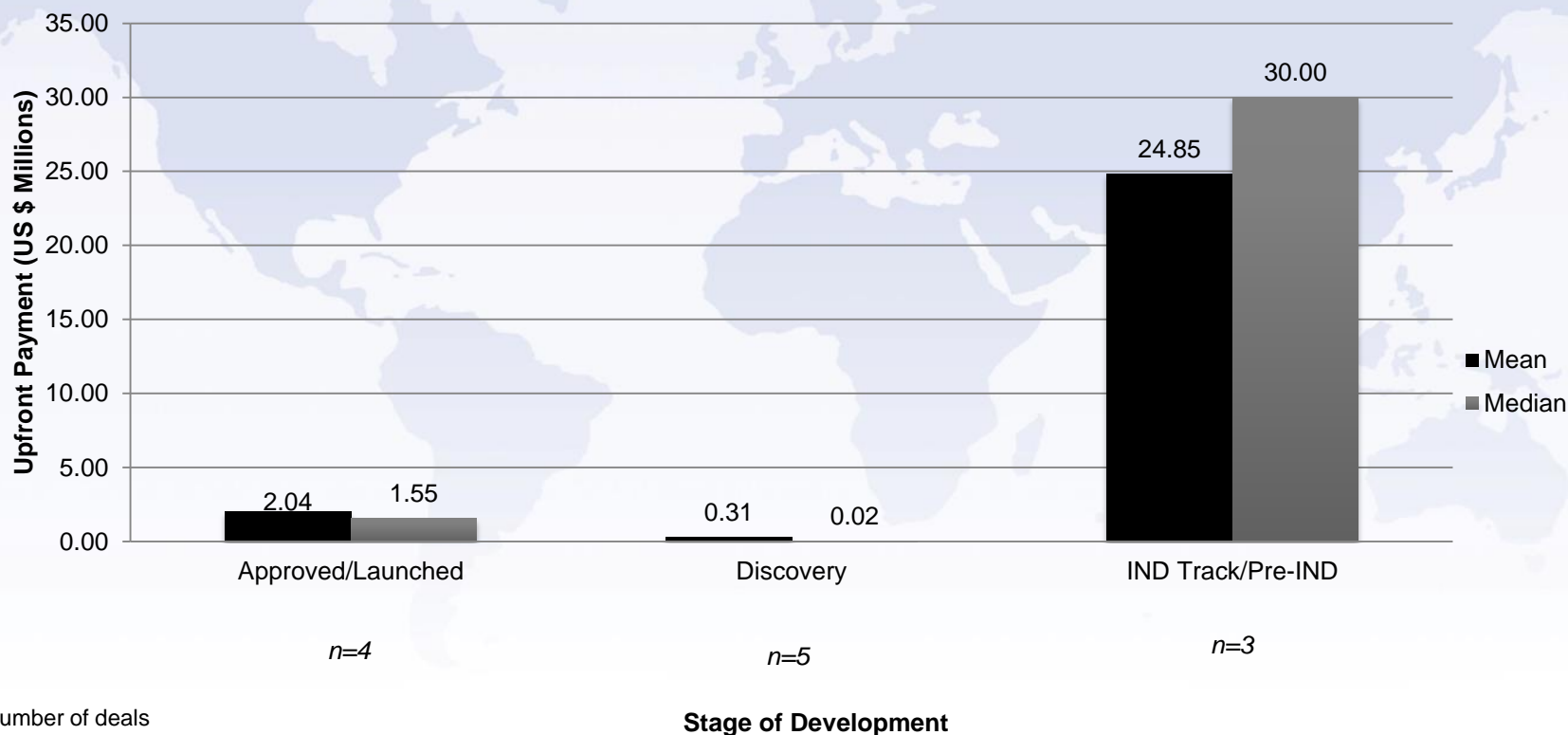
Fixed Royalty Rates (n=24)					
Other (Please specify)	# of Deals	Min	Median	Max	Mean
Approved/Launched					
Flat	4	3.0%	8.8%	15.0%	8.9%
Tiered	2				
Clinical Stage In Progress					
Flat	1				
Discovery					
Flat	9	1.0%	4.1%	30.0%	7.3%
No royalty component	2				
IND Track/Pre-IND					
Flat	1				
Tiered	3				
Phase 1 (patients enrolling)					
Flat	1				
Phase 2 (patients enrolling)					
No royalty component	1				

\*Specified as: unique chemical compound, Device to monitor cardiovascular health, Neuroimaging software diagnostic tool, biomedical research reagent, Medical Device, develop dental orthotics, Health App, To provide a biosciences start-up with research data and DNA samples in four disease areas, Device, Health Care operational know-how transfer, API Production, NA, New Biological Entity, New Biological Entity, Access to information on how a drug in development affects proprietary models, Healthcare IT communication tool, proprietary material license, Healthcare operational know-how, BIOLOGICAL SENSOR, Software, Surgical device, Outlicense, Gene Editing



# Other\* – Upfront Payments

## Mean and Median of Upfront Payments by Stage of Development



n = number of deals

Accompanying data on following page.

\*Specified as: biomedical research reagent, develop dental orthotics, Health App, To provide a biosciences start-up with research data and DNA samples in four disease areas, Device, Heath Care operational know-how transfer, API Production, New Biological Entity, New Biological Entity, Access to information on how a drug in development affects proprietary models, Healthcare operational know-how, Software, Surgical device, Outlicense



# Other\* – Upfront Payments

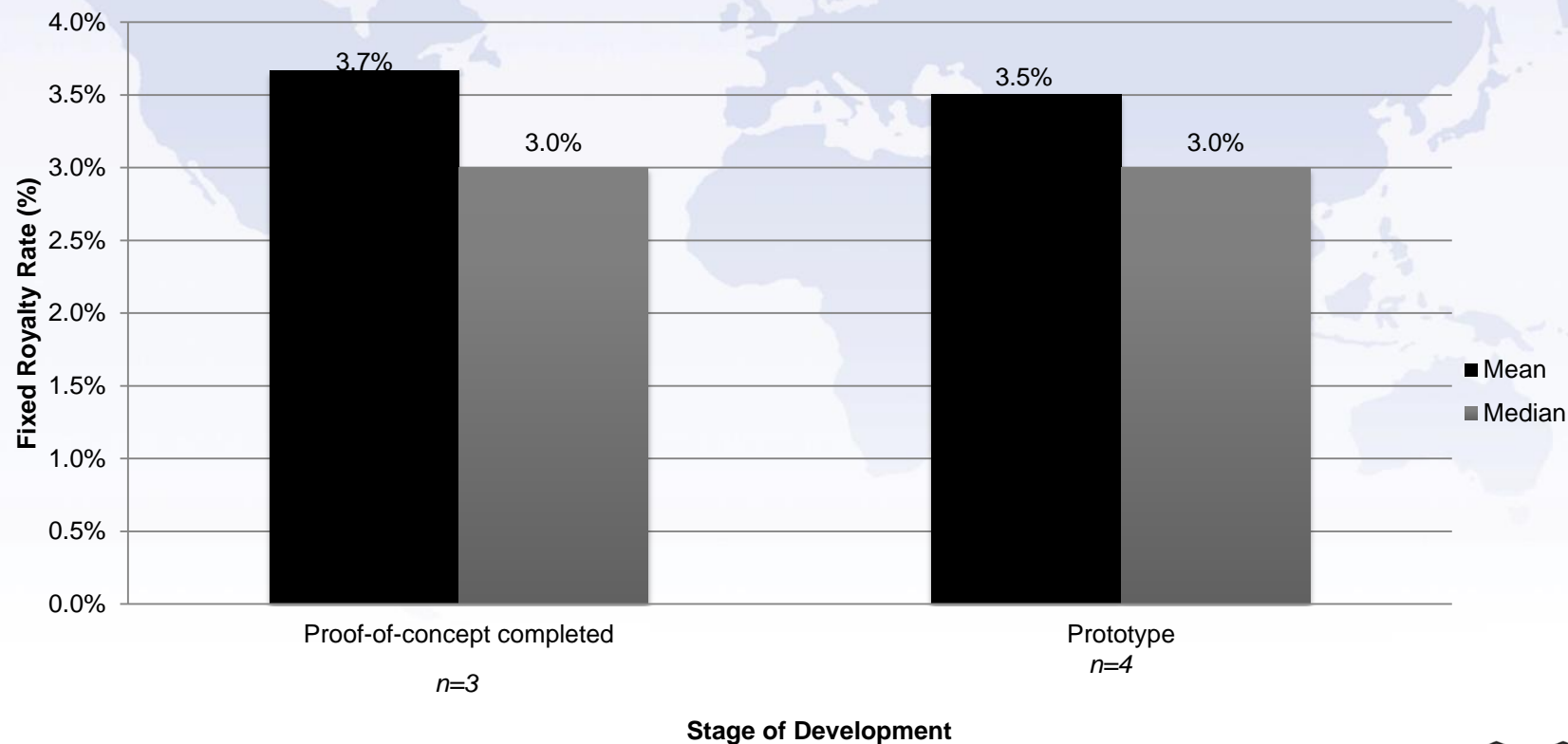
Upfront Payments (n=14)					
Other (Please specify)	# of Deals	Min	Median	Max	Mean
Discovery	5	0.00	0.02	1.50	0.31
IND Track/Pre-IND	3	0.05	30.00	44.50	24.85
Phase 1 (patients enrolling)	1				
Phase 2 (patients enrolling)	1				
Approved/Launched	4	0.05	1.55	5.00	2.04

\*Specified as: biomedical research reagent, develop dental orthotics, Health App, To provide a biosciences start-up with research data and DNA samples in four disease areas, Device, Health Care operational know-how transfer, API Production, New Biological Entity, New Biological Entity, Access to information on how a drug in development affects proprietary models, Healthcare operational know-how, Software, Surgical device, Outlicense



# Life Sciences Platform – *Fixed Royalty Rates*

**Mean and Median of Fixed Royalty Rate by Stage of Development**



n = number of deals

Accompanying data on following page.



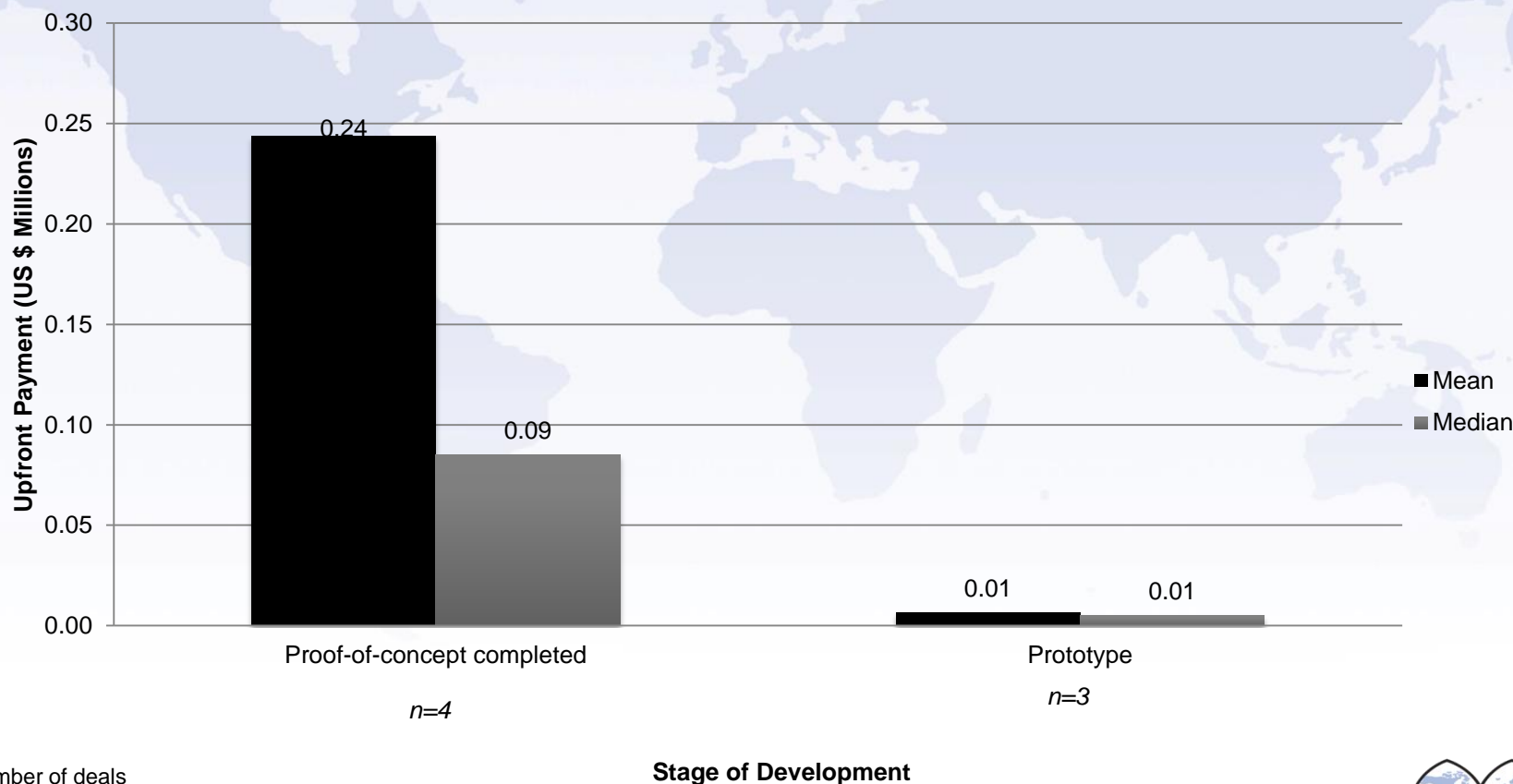


# Life Sciences Platform – *Type of Royalty Rate*

Fixed Royalty Rates (n=12)					
Life Sciences Platform Deal	# of Deals	Min	Median	Max	Mean
Proof-of-concept completed					
Flat	3	3.0%	3.0%	5.0%	3.7%
No royalty component	1				
Tiered	1				
Prototype					
Flat	4	3.0%	3.0%	5.0%	3.5%
Ready for commercialization					
Flat	1				
Final product in development (including manufacturing development)					
Flat	2				

# Life Sciences Platform – *Upfront* Payments

**Mean and Median of Upfront Payments by Stage of Development**



n = number of deals

Accompanying data on following page.



# Life Sciences Platform – *Upfront Payments*

Upfront Payments (n=7)					
Life Sciences Platform Deal	# of Deals	Min	Median	Max	Mean
Proof-of-concept completed	4	0.01	0.09	0.80	0.24
Prototype	3	0.01	0.01	0.01	0.01



# Appendix A

## *Aggregate Survey Results by Question*

*(Combined LES USA & Canada and LESI)*



# Appendix A

## Aggregate Survey Results

- **QA. What type of Organization are you?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
20	47	40%	Not-for-profit
7	8	7%	Government
30	52	44%	Operating Company
9	10	9%	Other (Please specify)*
<b>Total</b>	<b>117</b>	<b>100%</b>	

\*Academic, Consultancy, Consulting firm representing an operating company, consulting firm, For profit corporation, KPO in IP Services, University, University, University, University TTO

- **QA1. What type of Not-for-Profit?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
15	32	68%	Academic (incl. medical/veterinary/dental schools)
2	6	13%	Hospital (not affiliated with medical/veterinary/dental schools)
3	8	17%	Medical Research Institute
0	1	2%	Foundation/NGO (not affiliated with any of the three above)
0	0	0%	Patient Advocacy Group
0	0	0%	Other (Please specify)
<b>Total</b>	<b>47</b>	<b>100%</b>	



# Appendix A

## Aggregate Survey Results

- QA2. What type of Operating Company?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
8	14	27%	Biotechnology
13	26	50%	Pharmaceutical
1	1	2%	Diagnostic (IVD manufacturer or reference laboratory)
3	5	10%	Medical Device (other than diagnostics)
2	2	4%	Health Information Technology / Analytics
1	1	2%	Life sciences research tools
1	1	2%	Drug Delivery
2	2	4%	Other (Please specify)
<b>Total</b>	<b>52</b>	<b>100%</b>	

\*Healthcare, consulting

- QB. In the past 12 months, how many licenses were executed by your company/organization?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
24	28	24%	1- 2 licenses
15	28	24%	3 - 5 licenses
7	15	13%	6 - 10 licenses
8	22	19%	11 - 20 licenses
12	24	21%	More than 20 licenses
<b>Total</b>	<b>117</b>	<b>100%</b>	



# Appendix A

## Aggregate Survey Results

- **QC.** What was your organization's annual sales revenue (in US dollars) in the business unit for this deal (e.g. pharmaceuticals, diagnostics, etc.) in 2015?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
15	19	31%	Pre-commercial Operating Company
13	17	27%	\$0-\$100 million
3	3	5%	\$101-\$250 million
1	1	2%	\$251-\$500 million
2	2	3%	\$501-\$1,000 million
1	1	2%	\$1,001-\$5,000 million
6	19	31%	\$5,000+ million
<b>Total</b>	<b>62</b>	<b>100%</b>	

- **Q1.** What year did this deal close?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
14	21	18%	2014
27	43	37%	2015
43	53	45%	2016
<b>Total</b>	<b>117</b>	<b>100%</b>	

- **Q2.** Was this exclusive or non-exclusive to the Parties?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
56	98	84%	Exclusive
14	19	16%	Non-exclusive
<b>Total</b>	<b>117</b>	<b>100%</b>	

- **Q3.** Were you the Licensor or Licensee?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
47	83	71%	Licensor
21	34	29%	Licensee
<b>Total</b>	<b>117</b>	<b>100%</b>	





# Appendix A

## Aggregate Survey Results

• **Q4. The MAJOR reason for this deal was:**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
7	12	10%	Drug Platform Deal
19	31	27%	New Chemical Entity Deal
9	9	8%	Drug Use Deal
2	2	2%	Drug Delivery Product Deal (Same Label)
2	2	2%	Drug Delivery Product Deal (Novel Label)
2	2	2%	Drug/Device Combination Product Deal
1	1	1%	Drug Delivery Platform Deal
0	0	0%	Drug/Drug Combination Product Deal
8	10	9%	Marketed Branded Product Deal
3	3	3%	In Vivo Diagnostics Deal
8	8	7%	In Vitro Diagnostics Deal
10	12	10%	Life Sciences Platform Deal
16	24	21%	Other (Please specify)*
<b>Total</b>	<b>116</b>	<b>100%</b>	

\* unique chemical compound, To provide a biosciences start-up with research data and DNA samples in four disease areas, Surgical device, Software, Software, proprietary material license, Outlicense, New Biological Entity, New Biological Entity, Neuroimaging software diagnostic tool, NA, Medical Device, Health Care operational know-how transfer, Healthcare operational know-how, Healthcare IT communication tool, Health App, Gene Editing, Device to monitor cardiovascular health, Device, develop dental orthotics, biomedical research reagent, BIOLOGICAL SENSOR, API Production, Access to information on how a drug in development affects proprietary models

• **Q5. What is the expected route of administration/delivery method in the license? (Check all that apply)**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
11	21	18%	Injectable - subcutaneous or intramuscular
21	35	30%	Injectable - intravenous
17	21	18%	Oral
9	9	8%	Topical/Transdermal
3	3	3%	Nasal
13	19	17%	Other (Please specify)*
27	35	30%	NA
<b>Total</b>	<b>115</b>	<b>NA Total</b>	

\* wearable, wearable, wearable, Used as a device, Surgical Implant, Surgical Device, Surgical device, small molecule discovery, oral cavity delivery, ocular, ocular, NA, Medical devices for surgery, inhaled by nebulizer, inhalation, Gene Editing, Eye drop, diagnostic. N/A, dental orthotic device



# Appendix A

## Aggregate Survey Results

- **Q6. What is the field of use? (Check all that apply)**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
21	30	26%	Research Purposes
57	103	90%	Human
13	18	16%	Veterinary
<b>Total</b>	<b>115</b>	<b>NA Total</b>	

- **Q7. What was the type of the counterpart organization?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
7	8	7%	Not-for-Profit
2	2	2%	Government
57	103	88%	Operating Company
4	4	3%	Other (Please specify)*
<b>Total</b>	<b>117</b>	<b>100%</b>	

\*start-up, NA, Med. School, Academic,

- **Q7a. What type of Not-for-Profit?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
4	4	50%	Academic (incl. medical/veterinary/dental schools)
2	2	25%	Hospital (not affiliated with medical/veterinary/dental schools)
1	1	13%	Medical Research Institute
1	1	13%	Foundation/NGO (not affiliated with any of the three above)
0	0	0%	Patient Advocacy Group
0	0	0%	Other (Please specify)
<b>Total</b>	<b>8</b>	<b>100%</b>	



# Appendix A

## Aggregate Survey Results

- Q7b. What type of Operating Company?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
26	44	43%	Biotechnology
21	24	23%	Pharmaceutical
6	7	7%	Diagnostic (IVD manufacturer or reference laboratory)
10	12	12%	Medical Device (other than diagnostics)
5	5	5%	Health Information Technology / Analytics
4	6	6%	Life sciences research tools
5	5	5%	Other (Please specify)*
<b>Total</b>	<b>103</b>	<b>100%</b>	

\*Veterinary, High Technology, Healthcare system, Funding

- Q8. What was the counterpart organization's estimated annual pharmaceutical sales revenue (in US dollars) in 2013?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
0	0	0%	Not-for-Profit or Government Organization
30	49	48%	Pre-commercial Operating Company
23	34	33%	\$0-\$100 million
3	3	3%	\$101-\$250 million
2	2	2%	\$251-\$500 million
2	2	2%	\$501-\$1,000 million
2	2	2%	\$1,001-\$5,000 million
9	11	11%	\$5,000+ million
<b>Total</b>	<b>103</b>	<b>100%</b>	



# Appendix A

## Aggregate Survey Results

- Q9.** At closing, what was the most advanced stage of development of the product for the principle indication? *(does not include In-Vitro diagnostic deals)*

Companies	Deals	Pct. Selected	Choice
21	36	38%	Discovery
15	25	26%	IND Track/Pre-IND
1	1	1%	IND Filed
4	4	4%	Phase 1 (patients enrolling)
2	2	2%	Phase 1 (completed)
4	4	4%	Phase 2 (patients enrolling)
3	3	3%	Phase 2 (completed)
2	2	2%	Phase 3 (patients enrolling)
0	0	0%	Phase 3 (completed)
3	3	3%	Registered/NDA submitted
12	15	16%	Approved/Launched
<b>Total</b>	<b>95</b>	<b>100%</b>	

- Q9.** At closing, what was the most advanced stage of development of the product for the principle indication? *(In-Vitro diagnostic deals only)*

Companies	Deals	Pct. Selected	Choice
3	3	33%	Research Use Only
3	3	33%	Pre-IDE
0	0	0%	IDE Submitted
1	1	11%	Clinical Stage In Progress
0	0	0%	Clinical Stage Completed
2	2	22%	Registration/510(k)/PMA (or equivalent) submitted
0	0	0%	Approved/Launched
<b>Total</b>	<b>9</b>	<b>100%</b>	



# Appendix A

## Aggregate Survey Results

- **Q9.** At closing, what was the most advanced stage of development of the product for the principle indication? (Life Sciences Platform deals only)

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
5	5	42%	Proof-of-concept completed
2	4	33%	Prototype
2	2	17%	Final product in development (including manufacturing development)
1	1	8%	Ready for commercialization
0	0	0%	Commercialized product
<b>Total</b>	<b>12</b>	<b>100%</b>	

- **Q10.** Please choose the type or category of product that was the subject of this deal (does not include In-Vitro diagnostic deals).

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
0	0	0%	Cytokine
14	19	18%	Device
3	5	5%	Gene therapy
2	3	3%	Hormone
8	12	11%	Monoclonal antibody
2	2	2%	Natural product
10	12	11%	Peptide/protein
8	10	9%	Platform Technology
4	4	4%	RNAi/antisense (or similar)
19	26	24%	Small molecule
1	1	1%	Stem Cell
2	2	2%	Vaccine
5	6	6%	Diagnostic based on a type of product other than those listed
3	6	6%	Other*
<b>Total</b>	<b>108</b>	<b>100%</b>	

\*Operational know-how; not technology based, NA, IT communication tool, Health App, Gene Editing, Data



# Appendix A

## Aggregate Survey Results

- **Q11.** Please select the principle therapeutic (or diagnostic) area for which the product was licensed.

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
19	27	23%	Oncology
1	1	1%	Blood & clotting
5	6	5%	Cardiovascular
5	6	5%	CNS-Neurological/Neurodegenerative
3	3	3%	CNS-Pain
0	0	0%	CNS-Psychiatric
3	3	3%	CNS-Other (Please specify)*
0	0	0%	Dermatology
4	5	4%	Gastrointestinal
3	3	3%	Immunological
2	2	2%	Inflammation/musculoskeletal
6	8	7%	Infectious Disease-Bacterial
2	2	2%	Infectious Disease-Viral
2	2	2%	Infectious Disease-Other (Please specify)**
7	10	9%	Metabolic/Endocrine
5	6	5%	Ophthalmology
3	3	3%	Respiratory
2	2	2%	Urological/renal
20	28	24%	Other (Please specify)***
<b>Total</b>	<b>117</b>	<b>100%</b>	

\* Surgically implantable sensor, Inflammation, Brain organoids

\*\* General defense, Digestion

\*\*\* Surgical/ENT, surgical - colon rectal surgeons, Skincare, Research product, research, Primary hyperoxaluria, Orthopedic, Operational know-how; not technology based, obstetrics, Not therapeutic or diagnostic, Not therapeutic or diagnostic, Not a therapeutic or diagnostic, NA, NA, N/A, multi, holistic, healthy choices, Emergency medicine, DNA analysis, Dental, cystic fibrosis, Communication tool, cardiovascular monitoring, BIODEFENSE, Allergy, all fields, ALL AREAS





# Appendix A

## Aggregate Survey Results

- **Q12.** Did this deal have flat or tiered royalties?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
49	73	62%	Flat
23	34	29%	Tiered
8	10	9%	No royalty component
<b>Total</b>	<b>117</b>	<b>100%</b>	

- **Q12a.** Are the royalties paid on:

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
10	11	10%	Gross Sales
55	95	89%	Net Sales
1	1	1%	Units
0	0	0%	Other (Please specify)
<b>Total</b>	<b>107</b>	<b>100%</b>	

- **Q13.** What was the flat royalty rate for this deal? (%)

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>1st QUARTILE</i>	<i>MEDIAN</i>	<i>3rd QUARTILE</i>	<i>MAX</i>	<i>MODE</i>	<i>MEAN</i>	<i>STD. DEV.</i>
Flat Royalty Rate	49	72	1.00%	2.9%	4.0%	5.5%	30.0%	5.0%	5.9%	5.9%





# Appendix A

## Aggregate Survey Results

- **Q14.** Please provide the royalty tier structure that most closely resembled your deal.

*Similar to the 2014 summary results, we are not providing summary statistics for the Tier data. Tier data is presented in the main body of this report.*

- **Q15.** Since this deal did NOT include royalties, was there a profit sharing component?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
1	1	10%	Yes
7	9	90%	No
<b>Total</b>	<b>10</b>	<b>100%</b>	

- **Q16.** What was the ratio of profit sharing?

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>MEAN</i>	<i>MAX</i>
Licensor	1	1	7.0%	7.0%	7.0%
Licensee	1	1	93.0%	93.0%	93.0%



# Appendix A

## Aggregate Survey Results

- Q17.** What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)

*A total of 99 deals entered data for at least 1 of the below components. The calculations below exclude blanks and zeroes.*

Financial Component	Companies	Deals	% of Deals with this Financial Component*	MIN	FIRST QUARTILE	MEDIAN	THIRD QUARTILE	MAX	MODE	MEAN	STD. DEV.
Payment of Up-front Fee at Signing	47	81	82%	0.002	0.1	0.2	3.0	250.0	0.0	11.0	33.4
Payment of Technology Access Fee	6	6	6%	0.200	0.5	0.6	1.5	2.5	0.5	1.0	0.9
Equity Investment(s)	6	7	7%	0.250	0.3	0.5	27.5	88.0	0.3	20.6	34.9
Research and Development Funding	13	19	19%	0.050	0.3	1.7	4.4	350.0	0.3	22.6	79.7
Development Milestone Payments	32	61	62%	0.025	0.5	3.5	61.0	650.0	0.5	49.3	99.5
Sales Milestone Payments	26	49	49%	0.100	0.6	17.0	105.0	850.0	1.0	92.8	157.9

\*Denominator is all deals that provided information for at least one of the above financial components.



# Appendix A

## Aggregate Survey Results

- **Q17.** What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (Continued) (US\$ Millions)

Financial Component	Don't Know			Not Applicable		
	Companies	Deals	Pct Selected	Companies	Deals	Pct Selected
Payment of Up-front Fee at Signing	4	4	3%	24	33	4%
Payment of Technology Access Fee	4	4	3%	58	108	4%
Equity Investment(s)	10	19	16%	55	91	19%
Research and Development Funding	8	10	9%	46	88	9%
Development Milestone Payments	8	9	8%	33	48	8%
Sales Milestone Payments	9	9	8%	39	59	8%



# Appendix A

## Aggregate Survey Results

- Q18. Which territories were included in the deal? (Check all the apply)**

*One deal could be in multiple territories so total deals does not equal the sum of the choices.*

Companies	Deals	Pct. Selected	Choice
49	93	79%	Global
2	3	3%	All of Europe
0	0	0%	EU-5
2	2	2%	EU-27
0	0	0%	Russia
0	0	0%	CIS
1	1	1%	Scandinavia
1	1	1%	Other Europe
1	1	1%	All of Asia
4	4	3%	Japan
2	2	2%	China
3	3	3%	India
2	2	2%	Korea
2	2	2%	Middle East
2	2	2%	Other Asia
1	1	1%	All of North America
5	7	6%	USA

Companies	Deals	Pct. Selected	Choice
3	3	3%	Canada
2	2	2%	Mexico
1	1	1%	Other North America
1	2	2%	All of South America
0	0	0%	Argentina
0	0	0%	Brazil
0	0	0%	Chile
0	0	0%	Other South America
1	2	2%	All of Africa
0	0	0%	Egypt
0	0	0%	South Africa
1	1	1%	Other Africa
2	3	3%	All of Pacific
0	0	0%	Australia
0	0	0%	New Zealand
0	0	0%	Philippines
0	0	0%	Other Pacific



# Appendix A

## Aggregate Survey Results

- **Q19.** Please indicate the estimated Total peak sales for all territories.

*One deal could be in multiple territories so total deals does not equal the sum of the choices.*

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
21	26	39%	\$0 - \$100 million
12	12	18%	\$101 - \$250 million
5	7	11%	\$251 - \$500 million
7	7	11%	\$501 - \$1,000 million
9	14	21%	\$1,000+ million
<b>Total</b>	<b>66</b>	<b>100%</b>	

22	43	37%	Don't Know
5	8	7%	Not Applicable

- **Q20.** Did this deal include shared commercialization rights for the licensor in the territory (e.g., co-promotion or co-marketing rights)?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
5	5	5%	Yes
56	96	94%	No
1	1	1%	Option to "opt-in"
<b>Total</b>	<b>107</b>	<b>100%</b>	

3	3	3%	Don't Know
7	12	10%	Not Applicable



# Appendix A

## Aggregate Survey Results

- **Q21.** Who has the operational responsibility for the following functions?

	<i>Licensor</i>			<i>Licensee</i>			<i>Don't Know</i>			<i>Not Applicable</i>		
	<i>Companies</i>	<i>Deals</i>	<i>Pct Selected</i>	<i>Companies</i>	<i>Deals</i>	<i>Pct Selected</i>	<i>Companies</i>	<i>Deals</i>	<i>Pct Selected</i>	<i>Companies</i>	<i>Deals</i>	<i>Pct Selected</i>
Research	25	35	37%	32	59	63%	94	100%	0	0	0%	16
Preclinical development	15	18	20%	38	70	80%	88	100%	1	1	1%	20
Clinical Development	12	14	15%	42	80	85%	94	100%	1	1	1%	17
Regulatory	9	9	9%	54	94	91%	103	100%	0	0	0%	10
Manufacturing	15	17	16%	48	88	84%	105	100%	0	1	1%	8
Commercialization	2	2	2%	59	108	98%	110	100%	0	0	0%	5

# Appendix A

## Aggregate Survey Results

- **Q22.** Who has financial responsibility for the following functions? (input % of cost)

	Companies	Deals	Licensor Mean	Licensee Mean	Total	Don't Know			Not Applicable		
						Companies	Deals	Pct Selected	Companies	Deals	Pct Selected
Research	44	78	29.5%	70.5%	100%	8	10	8%	24	30	25%
Preclinical development	43	79	16.1%	83.9%	100%	6	7	6%	24	32	27%
Clinical Development	45	85	10.1%	89.9%	100%	7	8	7%	19	25	21%
Regulatory	50	90	7.2%	92.8%	100%	8	9	8%	13	19	16%
Manufacturing	54	97	12.3%	87.7%	100%	6	9	8%	9	12	10%
Commercialization	54	101	2.6%	97.4%	100%	6	9	8%	7	8	7%





# Appendix A

## Aggregate Survey Results

• **Q23. Manufacturing supply: How is the Transfer Price for commercial supply established?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
37	68	87%	Licensee is responsible for commercial supply, transfer price not applicable.
3	5	6%	Licensor responsibility: Cost of manufacture
2	2	3%	Licensor responsibility: Cost of manufacture plus profit component that is a % of net sales (royalty)
3	3	4%	Licensor responsibility: Cost of manufacture plus profit component is a % of cost of manufacture,
<b>Total</b>	<b>78</b>	<b>100%</b>	
8	11	9%	Don't Know
18	28	24%	Not Applicable
2	2	N/A	Average % of cost of net sales (royalty)
3	3	33%	Average % of cost of manufacturer

# Appendix A

## Aggregate Survey Results

- **Q24.** As part of deal process, did you financially model the value of the deal?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
41	46	66%	Yes
16	24	34%	No (Please explain why not)*
<b>Total</b>	<b>70</b>	<b>100%</b>	
10	23	20%	Don't Know
7	23	20%	Not Applicable

\*Market Comparables, Market Comparables, market comp for cell line licensing, industry norms, industry norms, Fixed R&D costs, Estimated just royalty rate from projected margins., deal comparables, deal comparables, Cost to recapitulate studies, Consultant's report, comps, Comps, comps, comps, comps, comparator deals, Comparables, Comparables, comparables, Comparable deals, comparable, AUTM Survey for Terms

- **Q25.** Please select ALL the methods used:

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
25	28	62%	Net Present Value (NPV)
21	22	49%	Risk Adjusted Net Present Value (rNPV)
16	18	40%	Internal Rate of Return (IRR)
3	10	22%	Effective Royalty Rate (EFR)
12	12	27%	Peak Revenue or Income
26	28	62%	Comparables
8	9	20%	Multiples (i.e. on sales or on projected earnings)
4	4	9%	Other (Please specify)*
<b>Total</b>	<b>45</b>	<b>NA Total</b>	
1	1	2%	Don't Know
1	1	2%	Not Applicable

\*Payback period, proprietary, Cost Recovery - Plus, Breakeven analysis



# Appendix A

## Aggregate Survey Results

- **Q26.** Please select the primary method used:

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
12	13	29%	Net Present Value (NPV)
13	14	31%	Risk Adjusted Net Present Value (rNPV)
2	2	4%	Internal Rate of Return (IRR)
1	1	2%	Effective Royalty Rate (ERR)
1	1	2%	Peak Revenue or Income
9	10	22%	Comparables
1	2	4%	Multiples (i.e. on sales or on projected earnings)
2	2	4%	Other (Please specify)*
<b>Total</b>	<b>45</b>	<b>100%</b>	
0	0	0%	Don't Know
0	0	0%	Not Applicable

\*Proprietary, breakeven analysis



# Appendix A

## Aggregate Survey Results

- Q27. What was the calculated NPV or rNPV value?**

*\*One extreme outlier was removed.*

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>1st QUARTILE</i>	<i>MEDIAN</i>	<i>3rd QUARTILE</i>	<i>MAX</i>	<i>MODE</i>	<i>MEAN</i>	<i>STD. DEV.</i>
NPV or rNPV	19	22	2	6	52	94	500	6	88	123

	<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>
Don't Know	9	9	21%
Not Applicable	11	12	28%

- Q28. What was the discount rate used?**

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>1st QUARTILE</i>	<i>MEDIAN</i>	<i>3rd QUARTILE</i>	<i>MAX</i>	<i>MODE</i>	<i>MEAN</i>	<i>STD. DEV.</i>
Discounted Rate	23	25	4	9	12	15	50	12	14	9

	<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>
Don't Know	8	9	20%
Not Applicable	10	11	24%



# Appendix A

## Aggregate Survey Results

- **Q29.** Did your analysis include an overall probability of success to marketing approval from the date of deal to commercialization?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
16	17	74%	Yes (Please enter the percent)
6	6	26%	No (Please explain)*
<b>Total</b>	<b>23</b>	<b>100%</b>	
7	8	20%	Don't Know
9	10	24%	Not Applicable
13	14	45%	Probability of success

\*Not a single PoS used, each stage/cost/revenue has own PoS, Approved in US/Europe, adjusted POS per stage

- **Q30.** Did the final deal structure reflect the valuation you established prior to negotiations?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
26	34	72%	Yes
4	4	9%	No, it was higher
8	9	19%	No, it was lower
<b>Total</b>	<b>47</b>	<b>100%</b>	
17	30	26%	Don't Know
17	38	33%	Not Applicable



# Appendix A

## Aggregate Survey Results

- **Q31.** What was the actual split of deal valuation?

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>MEAN</i>	<i>MAX</i>
Licensor	11	13	5.0%	37.7%	69.0%
Licensee	11	13	31.0%	62.3%	95.0%

	<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>
Don't Know	33	49	42%
Not Applicable	30	54	47%

- **Q32.** What was your target split or deal valuation prior to negotiations?

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>MEAN</i>	<i>MAX</i>
Licensor	12	14	15.0%	36.6%	65.0%
Licensee	12	14	35.0%	63.4%	85.0%

	<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>
Don't Know	31	45	39%
Not Applicable	31	57	49%



# Appendix B

## *Aggregate Survey Results by Question LES (USA & Canada)*





# Appendix B

## LES (USA & Canada) Survey Results

- **QA. What type of Organization are you?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
19	43	42%	Not-for-profit
6	7	7%	Government
23	44	43%	Operating Company
7	8	8%	Other (Please specify)*
<b>Total</b>	<b>102</b>	<b>100%</b>	

\*University, University TTO, University, For profit corporation, consulting firm, Consulting firm representing an operating company, Consultancy, Academic

- **QA1. What type of Not-for-Profit?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
13	28	65%	Academic (incl. medical/veterinary/dental schools)
2	6	14%	Hospital (not affiliated with medical/veterinary/dental schools)
3	8	19%	Medical Research Institute
1	1	2%	Foundation/NGO (not affiliated with any of the three above)
0	0	0%	Patient Advocacy Group
0	0	0%	Other (Please specify)*
<b>Total</b>	<b>43</b>	<b>100%</b>	



# Appendix B

## LES (USA & Canada) Survey Results

- QA2. What type of Operating Company?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
6	11	25%	Biotechnology
9	22	50%	Pharmaceutical
1	1	2%	Diagnostic (IVD manufacturer or reference laboratory)
3	5	11%	Medical Device (other than diagnostics)
2	2	5%	Health Information Technology / Analytics
1	1	2%	Life sciences research tools
1	1	2%	Drug Delivery
1	1	2%	Other (Please specify)
<b>Total</b>	<b>44</b>	<b>100%</b>	

\*Healthcare

- QB. In the past 12 months, how many licenses were executed by your company/organization?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
17	20	20%	1- 2 licenses
14	27	26%	3 - 5 licenses
7	15	15%	6 - 10 licenses
6	20	20%	11 - 20 licenses
11	20	20%	More than 20 licenses
<b>Total</b>	<b>102</b>	<b>100%</b>	



# Appendix B

## LES (USA & Canada) Survey Results

- **QC.** What was your organization's annual sales revenue (in US dollars) in the business unit for this deal (e.g. pharmaceuticals, diagnostics, etc.) in 2015?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
12	16	31%	Pre-commercial Operating Company
11	14	27%	\$0-\$100 million
2	2	4%	\$101-\$250 million
0	0	0%	\$251-\$500 million
1	1	2%	\$501-\$1,000 million
1	1	2%	\$1,001-\$5,000 million
5	18	35%	\$5,000+ million
<b>Total</b>	<b>52</b>	<b>100%</b>	

- **Q1.** What year did this deal close?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
11	18	18%	2014
23	39	38%	2015
36	45	44%	2016
<b>Total</b>	<b>102</b>	<b>100%</b>	

- **Q2.** Was this exclusive or non-exclusive to the Parties?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
44	84	82%	Exclusive
14	18	18%	Non-exclusive
<b>Total</b>	<b>102</b>	<b>100%</b>	

- **Q3.** Were you the Licensor or Licensee?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
42	74	73%	Licensor
15	28	27%	Licensee
<b>Total</b>	<b>102</b>	<b>100%</b>	



# Appendix B

## LES (USA & Canada) Survey Results

• **Q4. The MAJOR reason for this deal was:**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
7	12	12%	Drug Platform Deal
16	28	28%	New Chemical Entity Deal
5	5	5%	Drug Use Deal
1	1	1%	Drug Delivery Product Deal (Same Label)
2	2	2%	Drug Delivery Product Deal (Novel Label)
2	2	2%	Drug/Device Combination Product Deal
1	1	1%	Drug Delivery Platform Deal
0	0	0%	Drug/Drug Combination Product Deal
8	10	10%	Marketed Branded Product Deal
3	3	3%	In Vivo Diagnostics Deal
5	5	5%	In Vitro Diagnostics Deal
8	10	10%	Life Sciences Platform Deal
15	22	22%	Other (Please specify)*
<b>Total</b>	<b>101</b>	<b>100%</b>	

\* unique chemical compound, To provide a biosciences start-up with research data and DNA samples in four disease areas, Surgical device, Software, Software, proprietary material license, Outlicense, New Biological Entity, New Biological Entity, Neuroimaging software diagnostic tool, Medical Device, Health Care operational know-how transfer, Healthcare operational know-how, Healthcare IT communication tool, Health App, Gene Editing, Device to monitor cardiovascular health, Device, develop dental orthotics, biomedical research reagent, BIOLOGICAL SENSOR, Access to information on how a drug in development affects proprietary models

• **Q5. What is the expected route of administration/delivery method in the license? (Check all that apply)**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
10	20	20%	Injectable - subcutaneous or intramuscular
16	30	30%	Injectable - intravenous
14	18	18%	Oral
9	9	9%	Topical/Transdermal
3	3	3%	Nasal
14	19	19%	Other (Please specify)*
21	29	29%	NA
<b>Total</b>	<b>100</b>	<b>NA Total</b>	

\* wearable, wearable, wearable, Used as a device, Surgical Implant, Surgical Device, Surgical device, small molecule discovery, oral cavity delivery, ocular, ocular, NA, Medical devices for surgery, inhaled by nebulizer, inhalation, Gene Editing, Eye drop, diagnostic. N/A, dental orthotic device



# Appendix B

## LES (USA & Canada) Survey Results

- Q6. What is the field of use? (Check all that apply)**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
19	27	27%	Research Purposes
50	92	92%	Human
11	16	16%	Veterinary
<b>Total</b>	<b>100</b>	<b>NA Total</b>	

- Q7. What was the type of the counterpart organization?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
6	7	7%	Not-for-Profit
1	1	1%	Government
49	91	89%	Operating Company
3	3	3%	Other (Please specify)*
<b>Total</b>	<b>102</b>	<b>100%</b>	

\*start-up, Med. School, Academic

- Q7a. What type of Not-for-Profit?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
3	3	43%	Academic (incl. medical/veterinary/dental schools)
2	2	29%	Hospital (not affiliated with medical/veterinary/dental schools)
1	1	14%	Medical Research Institute
1	1	14%	Foundation/NGO (not affiliated with any of the three above)
0	0	0%	Patient Advocacy Group
0	0	0%	Other (Please specify)
<b>Total</b>	<b>7</b>	<b>100%</b>	



# Appendix B

## LES (USA & Canada) Survey Results

- Q7b. What type of Operating Company?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
23	41	45%	Biotechnology
16	19	21%	Pharmaceutical
3	4	4%	Diagnostic (IVD manufacturer or reference laboratory)
9	11	12%	Medical Device (other than diagnostics)
5	5	5%	Health Information Technology / Analytics
5	6	7%	Life sciences research tools
5	5	5%	Other (Please specify)*
<b>Total</b>	<b>91</b>	<b>100%</b>	

\*Veterinary, High Technology, Healthcare system, Funding

- Q8. What was the counterpart organization's estimated annual pharmaceutical sales revenue (in US dollars) in 2013?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
0	0	0%	Not-for-Profit or Government Organization
27	46	51%	Pre-commercial Operating Company
18	28	31%	\$0-\$100 million
3	3	3%	\$101-\$250 million
1	1	1%	\$251-\$500 million
2	2	2%	\$501-\$1,000 million
2	2	2%	\$1,001-\$5,000 million
8	9	10%	\$5,000+ million
<b>Total</b>	<b>91</b>	<b>100%</b>	





# Appendix B

## LES (USA & Canada) Survey Results

- Q9.** At closing, what was the most advanced stage of development of the product for the principle indication? *(does not include In-Vitro diagnostic deals)*

Companies	Deals	Pct. Selected	Choice
19	32	37%	Discovery
15	25	29%	IND Track/Pre-IND
1	1	1%	IND Filed
4	4	5%	Phase 1 (patients enrolling)
2	2	2%	Phase 1 (completed)
3	3	3%	Phase 2 (patients enrolling)
2	2	2%	Phase 2 (completed)
1	1	1%	Phase 3 (patients enrolling)
0	0	0%	Phase 3 (completed)
3	3	3%	Registered/NDA submitted
10	13	15%	Approved/Launched
<b>Total</b>	<b>86</b>	<b>100%</b>	

- Q9.** At closing, what was the most advanced stage of development of the product for the principle indication? *(In-Vitro diagnostic deals only)*

Companies	Deals	Pct. Selected	Choice
2	2	29%	Research Use Only
2	2	29%	Pre-IDE
0	0	0%	IDE Submitted
1	1	14%	Clinical Stage In Progress
0	0	0%	Clinical Stage Completed
2	2	29%	Registration/510(k)/PMA (or equivalent) submitted
0	0	0%	Approved/Launched
<b>Total</b>	<b>7</b>	<b>100%</b>	





# Appendix B

## LES (USA & Canada) Survey Results

- **Q9.** At closing, what was the most advanced stage of development of the product for the principle indication? (Life Sciences Platform deals only)

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
5	5	42%	Proof-of-concept completed
2	4	33%	Prototype
1	1	8%	Final product in development (including manufacturing development)
1	2	17%	Ready for commercialization
0	0	0%	Commercialized product
<b>Total</b>	<b>12</b>	<b>100%</b>	

- **Q10.** Please choose the type or category of product that was the subject of this deal (does not include In-Vitro diagnostic deals).

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
0	0	0%	Cytokine
13	18	19%	Device
3	5	5%	Gene therapy
2	3	3%	Hormone
7	11	11%	Monoclonal antibody
1	1	1%	Natural product
7	9	9%	Peptide/protein
8	10	10%	Platform Technology
3	3	3%	RNAi/antisense (or similar)
16	23	24%	Small molecule
0	0	0%	Stem Cell
2	2	2%	Vaccine
5	6	6%	Diagnostic based on a type of product other than those listed
3	5	5%	Other*
<b>Total</b>	<b>96</b>	<b>100%</b>	

\*Operational know-how; not technology based, IT communication tool, Health App, Gene Editing, Data



# Appendix B

## LES (USA & Canada) Survey Results

- **Q11.** Please select the principle therapeutic (or diagnostic) area for which the product was licensed.

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
16	22	22%	Oncology
1	1	1%	Blood & clotting
5	6	6%	Cardiovascular
5	6	6%	CNS-Neurological/Neurodegenerative
3	3	3%	CNS-Pain
0	0	0%	CNS-Psychiatric
3	3	3%	CNS-Other (Please specify)*
0	0	0%	Dermatology
3	4	4%	Gastrointestinal
2	2	2%	Immunological
2	2	2%	Inflammation/musculoskeletal
6	8	8%	Infectious Disease-Bacterial
2	2	2%	Infectious Disease-Viral
1	1	1%	Infectious Disease-Other (Please specify)**
5	8	8%	Metabolic/Endocrine
5	6	6%	Ophthalmology
1	1	1%	Respiratory
2	2	2%	Urological/renal
18	25	25%	Other (Please specify)***
<b>Total</b>	<b>102</b>	<b>100%</b>	

\* Surgically implantable sensor, Inflammation, Brain organoids

\*\* General defense

\*\*\* surgical - colon rectal surgeons, Skincare, Research product, research, Primary hyperoxaluria, Orthopedic, Operational know-how; not technology based, obstetrics, Not therapeutic or diagnostic, Not therapeutic or diagnostic, Not a therapeutic or diagnostic, NA, N/A, multi, holistic, healthy choices, Emergency medicine, DNA analysis, Dental, cystic fibrosis, Communication tool, cardiovascular monitoring, BIODEFENSE, all fields, ALL AREAS



# Appendix B

## LES (USA & Canada) Survey Results

- **Q12.** Did this deal have flat or tiered royalties?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
41	62	61%	Flat
21	32	31%	Tiered
6	8	8%	No royalty component
<b>Total</b>	<b>102</b>	<b>100%</b>	

- **Q12a.** Are the royalties paid on:

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
10	11	12%	Gross Sales
47	83	88%	Net Sales
0	0	0%	Units
0	0	0%	Other (Please specify)
<b>Total</b>	<b>94</b>	<b>100%</b>	

- **Q13.** What was the flat royalty rate for this deal? (%)

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>1st QUARTILE</i>	<i>MEDIAN</i>	<i>3rd QUARTILE</i>	<i>MAX</i>	<i>MODE</i>	<i>MEAN</i>	<i>STD. DEV.</i>
Flat Royalty Rate	40	61	1.00%	2.5%	4.0%	5.0%	30.0%	5.0%	5.4%	5.6%



# Appendix B

## LES (USA & Canada) Survey Results

- **Q14.** Please provide the royalty tier structure that most closely resembled your deal.

*Similar to the 2014 summary results, we are not providing summary statistics for the Tier data. Tier data is presented in the main body of this report.*

- **Q15.** Since this deal did NOT include royalties, was there a profit sharing component?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
0	0	0%	Yes
6	8	100%	No
<b>Total</b>	<b>8</b>	<b>100%</b>	

- **Q16.** What was the ratio of profit sharing?

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>MEAN</i>	<i>MAX</i>
Licensor	No data				
Licensee	No data				



# Appendix B

## LES (USA & Canada) Survey Results

- Q17.** What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)

*A total of 89 deals entered data for at least 1 of the below components. The calculations below exclude blanks and zeroes.*

Financial Component	Companies	Deals	% of Deals with this Financial Component*	MIN	FIRST QUARTILE	MEDIAN	THIRD QUARTILE	MAX	MODE	MEAN	STD. DEV.
Payment of Up-front Fee at Signing	41	73	82%	0.002	0.1	0.2	3.0	250.0	0.1	9.6	32.6
Payment of Technology Access Fee	5	5	6%	0.200	0.5	0.5	1.8	2.5	0.5	1.1	1.0
Equity Investment(s)	6	7	8%	0.250	0.3	0.5	27.5	88.0	0.3	20.6	34.9
Research and Development Funding	12	17	19%	0.050	0.3	1.7	3.8	350.0	0.3	24.0	84.3
Development Milestone Payments	29	57	64%	0.025	0.5	1.8	61.0	240.0	0.5	41.1	63.2
Sales Milestone Payments	24	46	52%	0.100	0.6	23.5	102.0	850.0	1.0	87.9	150.0

\*Denominator is all deals that provided information for at least one of the above financial components.



# Appendix B

## LES (USA & Canada) Survey Results

- **Q17.** What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (Continued) (US\$ Millions)

Financial Component	Don't Know			Not Applicable		
	Companies	Deals	Pct Selected	Companies	Deals	Pct Selected
Payment of Up-front Fee at Signing	2	2	2%	20	28	2%
Payment of Technology Access Fee	2	2	2%	50	96	2%
Equity Investment(s)	7	16	16%	46	79	19%
Research and Development Funding	5	7	7%	38	78	7%
Development Milestone Payments	6	6	6%	26	40	6%
Sales Milestone Payments	6	6	6%	32	50	6%





# Appendix B

## LES (USA & Canada) Survey Results

- Q18. Which territories were included in the deal? (Check all the apply)**

*One deal could be in multiple territories so total deals does not equal the sum of the choices.*

Companies	Deals	Pct. Selected	Choice
43	83	81%	Global
2	3	3%	All of Europe
0	0	0%	EU-5
1	1	1%	EU-27
0	0	0%	Russia
0	0	0%	CIS
1	1	1%	Scandinavia
1	1	1%	Other Europe
1	1	1%	All of Asia
2	2	2%	Japan
1	1	1%	China
2	2	2%	India
1	1	1%	Korea
2	2	2%	Middle East
1	1	1%	Other Asia
1	1	1%	All of North America
5	7	7%	USA

Companies	Deals	Pct. Selected	Choice
3	3	3%	Canada
2	2	2%	Mexico
1	1	1%	Other North America
1	2	2%	All of South America
0	0	0%	Argentina
0	0	0%	Brazil
0	0	0%	Chile
0	0	0%	Other South America
1	2	2%	All of Africa
0	0	0%	Egypt
0	0	0%	South Africa
1	1	1%	Other Africa
1	2	2%	All of Pacific
0	0	0%	Australia
0	0	0%	New Zealand
0	0	0%	Philippines
0	0	0%	Other Pacific





# Appendix B

## LES (USA & Canada) Survey Results

- **Q19.** Please indicate the estimated Total peak sales for all territories.

*One deal could be in multiple territories so total deals does not equal the sum of the choices.*

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
15	20	38%	\$0 - \$100 million
9	9	17%	\$101 - \$250 million
3	5	9%	\$251 - \$500 million
6	6	11%	\$501 - \$1,000 million
8	13	25%	\$1,000+ million
<b>Total</b>	<b>53</b>	<b>100%</b>	

22	41	40%	Don't Know
5	8	8%	Not Applicable

- **Q20.** Did this deal include shared commercialization rights for the licensor in the territory (e.g., co-promotion or co-marketing rights)?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
4	4	4%	Yes
49	85	94%	No
1	1	1%	Option to "opt-in"
<b>Total</b>	<b>90</b>	<b>100%</b>	

2	2	2%	Don't Know
5	10	10%	Not Applicable



# Appendix B

## LES (USA & Canada) Survey Results

- **Q21.** Who has the operational responsibility for the following functions?

	Licensor			Licensee			Don't Know			Not Applicable		
	Companies	Deals	Pct Selected	Companies	Deals	Pct Selected	Companies	Deals	Pct Selected	Companies	Deals	Pct Selected
Research	19	29	35%	29	53	65%	82	100%	0	0	0%	13
Preclinical development	11	14	18%	36	65	82%	79	100%	1	1	1%	15
Clinical Development	9	11	13%	38	73	87%	84	100%	1	1	1%	12
Regulatory	7	7	8%	46	82	92%	89	100%	0	0	0%	9
Manufacturing	11	13	14%	42	79	86%	92	100%	1	1	1%	6
Commercialization	2	2	2%	50	95	98%	97	100%	0	0	0%	3



# Appendix B

## LES (USA & Canada) Survey Results

- **Q22.** Who has financial responsibility for the following functions? (input % of cost)

	Companies	Deals	Licensor Mean	Licensee Mean	Total	Don't Know			Not Applicable		
						Companies	Deals	Pct Selected	Companies	Deals	Pct Selected
Research	41	72	28.1%	71.9%	100%	4	6	6%	18	24	24%
Preclinical development	40	74	15.1%	84.9%	100%	3	3	3%	18	25	25%
Clinical Development	41	79	9.5%	90.5%	100%	4	4	4%	13	19	19%
Regulatory	44	81	4.9%	95.1%	100%	5	5	5%	10	16	16%
Manufacturing	48	88	11.4%	88.6%	100%	3	5	5%	6	9	9%
Commercialization	48	92	2.7%	97.3%	100%	3	5	5%	4	5	5%



# Appendix B

## LES (USA & Canada) Survey Results

- **Q23. Manufacturing supply: How is the Transfer Price for commercial supply established?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
32	60	88%	Licensee is responsible for commercial supply, transfer price not applicable.
2	4	6%	Licensor responsibility: Cost of manufacture
1	1	1%	Licensor responsibility: Cost of manufacture plus profit component that is a % of net sales (royalty)
3	3	4%	Licensor responsibility: Cost of manufacture plus profit component is a % of cost of manufacture,
<b>Total</b>	<b>68</b>	<b>100%</b>	
6	8	8%	Don't Know
16	26	25%	Not Applicable
1	1	N/A	Average % of cost of net sales (royalty)
3	3	33%	Average % of cost of manufacturer



# Appendix B

## LES (USA & Canada) Survey Results

- **Q24.** As part of deal process, did you financially model the value of the deal?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
35	39	65%	Yes
13	21	35%	No (Please explain why not)*
<b>Total</b>	<b>60</b>	<b>100%</b>	
9	21	21%	Don't Know
5	21	21%	Not Applicable

\*Market Comparables, Market Comparables, market comp for cell line licensing, industry norms, industry norms, Estimated just royalty rate from projected margins., deal comparables, deal comparables, Cost to recapitulate studies, Consultant's report, comps, Comps, comps, comps, comps, Comparables, comparables, Comparable deals, comparable, AUTM Survey for Terms

- **Q25.** Please select ALL the methods used:

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
20	23	61%	Net Present Value (NPV)
15	16	42%	Risk Adjusted Net Present Value (rNPV)
15	16	42%	Internal Rate of Return (IRR)
1	8	21%	Effective Royalty Rate (EFR)
8	8	21%	Peak Revenue or Income
23	24	63%	Comparables
7	7	18%	Multiples (i.e. on sales or on projected earnings)
3	3	8%	Other (Please specify)*
<b>Total</b>	<b>38</b>	<b>NA Total</b>	
1	1	3%	Don't Know
1	1	3%	Not Applicable

\*Payback period, Cost Recovery - Plus, Breakeven analysis



# Appendix B

## LES (USA & Canada) Survey Results

- **Q26.** Please select the primary method used:

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
8	9	24%	Net Present Value (NPV)
11	12	32%	Risk Adjusted Net Present Value (rNPV)
2	2	5%	Internal Rate of Return (IRR)
1	1	3%	Effective Royalty Rate (ERR)
1	1	3%	Peak Revenue or Income
9	10	26%	Comparables
2	2	5%	Multiples (i.e. on sales or on projected earnings)
1	1	3%	Other (Please specify)*
<b>Total</b>	<b>38</b>	<b>100%</b>	
0	0	0%	Don't Know
0	0	0%	Not Applicable

\*breakeven analysis



# Appendix B

## LES (USA & Canada) Survey Results

- **Q27.** What was the calculated NPV or rNPV value?

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>1st QUARTILE</i>	<i>MEDIAN</i>	<i>3rd QUARTILE</i>	<i>MAX</i>	<i>MODE</i>	<i>MEAN</i>	<i>STD. DEV.</i>
NPV or rNPV	18	21	2	6	55	95	500	80	92	125

	<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>
Don't Know	6	6	16%
Not Applicable	9	10	27%

- **Q28.** What was the discount rate used?

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>1st QUARTILE</i>	<i>MEDIAN</i>	<i>3rd QUARTILE</i>	<i>MAX</i>	<i>MODE</i>	<i>MEAN</i>	<i>STD. DEV.</i>
Discounted Rate	18	20	4	10	12	16	50	12	15	10

	<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>
Don't Know	8	8	21%
Not Applicable	9	10	26%





# Appendix B

## LES (USA & Canada) Survey Results

- **Q29.** Did your analysis include an overall probability of success to marketing approval from the date of deal to commercialization?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
12	13	72%	Yes (Please enter the percent)
5	5	28%	No (Please explain)*
<b>Total</b>	<b>18</b>	<b>100%</b>	
7	7	21%	Don't Know
8	9	26%	Not Applicable
11	12	44%	Probability of success

\*Not a single PoS used, each stage/cost/revenue has own PoS, Approved in US/Europe, adjusted POS per stage

- **Q30.** Did the final deal structure reflect the valuation you established prior to negotiations?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
22	30	73%	Yes
4	4	10%	No, it was higher
7	7	17%	No, it was lower
<b>Total</b>	<b>41</b>	<b>100%</b>	
13	25	25%	Don't Know
14	35	35%	Not Applicable



# Appendix B

## LES (USA & Canada) Survey Results

- **Q31.** What was the actual split of deal valuation?

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>MEAN</i>	<i>MAX</i>
Licensor	8	10	5.0%	36.2%	69.0%
Licensee	8	10	31.0%	63.8%	95.0%

	<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>
Don't Know	29	42	41%
Not Applicable	26	50	49%

- **Q32.** What was your target split or deal valuation prior to negotiations?

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>MEAN</i>	<i>MAX</i>
Licensor	9	11	15.0%	36.6%	65.0%
Licensee	9	11	35.0%	63.4%	85.0%

	<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>
Don't Know	26	38	37%
Not Applicable	27	53	52%



# Appendix C

## *Aggregate Survey Results by Question*

*LESI (Excluding USA & Canada)*



# Appendix C

## LESI Survey Results

- QA. What type of Organization are you?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
2	4	27%	Not-for-profit
1	1	7%	Government
7	8	53%	Operating Company
2	2	13%	Other (Please specify)*
<b>Total</b>	<b>15</b>	<b>100%</b>	

\*KPO in IP Services, University

- QA1. What type of Not-for-Profit?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
2	4	100%	Academic (incl. medical/veterinary/dental schools)
0	0	0%	Hospital (not affiliated with medical/veterinary/dental schools)
0	0	0%	Medical Research Institute
0	0	0%	Foundation/NGO (not affiliated with any of the three above)
0	0	0%	Patient Advocacy Group
0	0	0%	Other (Please specify)
<b>Total</b>	<b>4</b>	<b>100%</b>	



# Appendix C

## LESI Survey Results

- QA2. What type of Operating Company?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
2	3	38%	Biotechnology
4	4	50%	Pharmaceutical
0	0	0%	Diagnostic (IVD manufacturer or reference laboratory)
0	0	0%	Medical Device (other than diagnostics)
0	0	0%	Health Information Technology / Analytics
0	0	0%	Life sciences research tools
0	0	0%	Drug Delivery
1	1	13%	Other (Please specify)
<b>Total</b>	<b>8</b>	<b>100%</b>	

\*consulting

- QB. In the past 12 months, how many licenses were executed by your company/organization?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
7	8	53%	1- 2 licenses
1	1	7%	3 - 5 licenses
0	0	0%	6 - 10 licenses
2	2	13%	11 - 20 licenses
2	4	27%	More than 20 licenses
<b>Total</b>	<b>15</b>	<b>100%</b>	



# Appendix C

## LESI Survey Results

- **QC.** What was your organization's annual sales revenue (in US dollars) in the business unit for this deal (e.g. pharmaceuticals, diagnostics, etc.) in 2015?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
3	3	30%	Pre-commercial Operating Company
2	3	30%	\$0-\$100 million
1	1	10%	\$101-\$250 million
1	1	10%	\$251-\$500 million
1	1	10%	\$501-\$1,000 million
0	0	0%	\$1,001-\$5,000 million
1	1	10%	\$5,000+ million
<b>Total</b>	<b>10</b>	<b>100%</b>	

- **Q1.** What year did this deal close?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
3	3	20%	2014
4	4	27%	2015
8	8	53%	2016
<b>Total</b>	<b>15</b>	<b>100%</b>	

- **Q2.** Was this exclusive or non-exclusive to the Parties?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
12	14	93%	Exclusive
1	1	7%	Non-exclusive
<b>Total</b>	<b>15</b>	<b>100%</b>	

- **Q3.** Were you the Licensor or Licensee?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
6	9	60%	Licensor
6	6	40%	Licensee
<b>Total</b>	<b>15</b>	<b>100%</b>	



# Appendix C

## LESI Survey Results

• **Q4. The MAJOR reason for this deal was:**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
0	0	0%	Drug Platform Deal
3	3	20%	New Chemical Entity Deal
4	4	27%	Drug Use Deal
1	1	7%	Drug Delivery Product Deal (Same Label)
0	0	0%	Drug Delivery Product Deal (Novel Label)
0	0	0%	Drug/Device Combination Product Deal
0	0	0%	Drug Delivery Platform Deal
0	0	0%	Drug/Drug Combination Product Deal
0	0	0%	Marketed Branded Product Deal
0	0	0%	In Vivo Diagnostics Deal
3	3	20%	In Vitro Diagnostics Deal
2	2	13%	Life Sciences Platform Deal
2	2	13%	Other (Please specify)*
<b>Total</b>	<b>15</b>	<b>100%</b>	

\* NA, API Production

• **Q5. What is the expected route of administration/delivery method in the license? (Check all that apply)**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
1	1	7%	Injectable - subcutaneous or intramuscular
5	5	33%	Injectable - intravenous
3	3	20%	Oral
0	0	0%	Topical/Transdermal
0	0	0%	Nasal
0	0	0%	Other (Please specify)
6	6	40%	NA
<b>Total</b>	<b>15</b>	<b>NA Total</b>	





# Appendix C

## LESI Survey Results

- **Q6.** What is the field of use? (Check all that apply)

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
3	3	20%	Research Purposes
8	11	73%	Human
2	2	13%	Veterinary
<b>Total</b>	<b>15</b>	<b>NA Total</b>	

- **Q7.** What was the type of the counterpart organization?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
1	1	7%	Not-for-Profit
1	1	7%	Government
9	12	80%	Operating Company
1	1	7%	Other (Please specify)*
<b>Total</b>	<b>15</b>	<b>100%</b>	

\*N/A

- **Q7a.** What type of Not-for-Profit?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
1	1	100%	Academic (incl. medical/veterinary/dental schools)
0	0	0%	Hospital (not affiliated with medical/veterinary/dental schools)
0	0	0%	Medical Research Institute
0	0	0%	Foundation/NGO (not affiliated with any of the three above)
0	0	0%	Patient Advocacy Group
0	0	0%	Other (Please specify)
<b>Total</b>	<b>1</b>	<b>100%</b>	



# Appendix C

## LESI Survey Results

- Q7b. What type of Operating Company?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
3	3	25%	Biotechnology
5	5	42%	Pharmaceutical
3	3	25%	Diagnostic (IVD manufacturer or reference laboratory)
1	1	8%	Medical Device (other than diagnostics)
0	0	0%	Health Information Technology / Analytics
0	0	0%	Life sciences research tools
0	0	0%	Other (Please specify)
<b>Total</b>	<b>12</b>	<b>100%</b>	

- Q8. What was the counterpart organization's estimated annual pharmaceutical sales revenue (in US dollars) in 2013?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
0	0	0%	Not-for-Profit or Government Organization
3	3	25%	Pre-commercial Operating Company
5	6	50%	\$0-\$100 million
0	0	0%	\$101-\$250 million
1	1	8%	\$251-\$500 million
0	0	0%	\$501-\$1,000 million
0	0	0%	\$1,001-\$5,000 million
2	2	17%	\$5,000+ million
<b>Total</b>	<b>12</b>	<b>100%</b>	



# Appendix C

## LESI Survey Results

- Q9.** At closing, what was the most advanced stage of development of the product for the principle indication? *(does not include In-Vitro diagnostic deals)*

Companies	Deals	Pct. Selected	Choice
4	5	50%	Discovery
0	0	0%	IND Track/Pre-IND
0	0	0%	IND Filed
0	0	0%	Phase 1 (patients enrolling)
0	0	0%	Phase 1 (completed)
1	1	10%	Phase 2 (patients enrolling)
1	1	10%	Phase 2 (completed)
1	1	10%	Phase 3 (patients enrolling)
0	0	0%	Phase 3 (completed)
0	0	0%	Registered/NDA submitted
2	2	20%	Approved/Launched
<b>Total</b>	<b>10</b>	<b>100%</b>	

- Q9.** At closing, what was the most advanced stage of development of the product for the principle indication? *(In-Vitro diagnostic deals only)*

Companies	Deals	Pct. Selected	Choice
1	1	33%	Research Use Only
2	2	67%	Pre-IDE
0	0	0%	IDE Submitted
0	0	0%	Clinical Stage In Progress
0	0	0%	Clinical Stage Completed
0	0	0%	Registration/510(k)/PMA (or equivalent) submitted
0	0	0%	Approved/Launched
<b>Total</b>	<b>3</b>	<b>100%</b>	



# Appendix C

## LESI Survey Results

- **Q9.** At closing, what was the most advanced stage of development of the product for the principle indication? (Life Sciences Platform deals only)

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
1	1	50%	Proof-of-concept completed
0	0	0%	Prototype
1	1	50%	Final product in development (including manufacturing development)
0	0	0%	Ready for commercialization
0	0	0%	Commercialized product
<b>Total</b>	<b>2</b>	<b>100%</b>	

- **Q10.** Please choose the type or category of product that was the subject of this deal (does not include In-Vitro diagnostic deals).

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
0	0	0%	Cytokine
1	1	8%	Device
0	0	0%	Gene therapy
0	0	0%	Hormone
1	1	8%	Monoclonal antibody
1	1	8%	Natural product
3	3	25%	Peptide/protein
0	0	0%	Platform Technology
1	1	8%	RNAi/antisense (or similar)
3	3	25%	Small molecule
1	1	8%	Stem Cell
0	0	0%	Vaccine
0	0	0%	Diagnostic based on a type of product other than those listed
1	1	8%	Other
<b>Total</b>	<b>12</b>	<b>100%</b>	



# Appendix C

## LESI Survey Results

- **Q11.** Please select the principle therapeutic (or diagnostic) area for which the product was licensed.

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
3	5	33%	Oncology
0	0	0%	Blood & clotting
0	0	0%	Cardiovascular
0	0	0%	CNS-Neurological/Neurodegenerative
0	0	0%	CNS-Pain
0	0	0%	CNS-Psychiatric
0	0	0%	CNS-Other (Please specify)*
0	0	0%	Dermatology
1	1	7%	Gastrointestinal
1	1	7%	Immunological
0	0	0%	Inflammation/musculoskeletal
0	0	0%	Infectious Disease-Bacterial
0	0	0%	Infectious Disease-Viral
1	1	7%	Infectious Disease-Other (Please specify)**
2	2	13%	Metabolic/Endocrine
0	0	0%	Ophthalmology
2	2	13%	Respiratory
0	0	0%	Urological/renal
3	3	20%	Other (Please specify)***
<b>Total</b>	<b>15</b>	<b>100%</b>	

\*\* Digestion

\*\*\* Surgical/ENT, NA, Allergy



# Appendix C

## LESI Survey Results

- **Q12.** Did this deal have flat or tiered royalties?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
9	11	73%	Flat
2	2	13%	Tiered
2	2	13%	No royalty component
<b>Total</b>	<b>15</b>	<b>100%</b>	

- **Q12a.** Are the royalties paid on:

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
0	0	0%	Gross Sales
9	12	92%	Net Sales
1	1	8%	Units
0	0	0%	Other (Please specify)
<b>Total</b>	<b>13</b>	<b>100%</b>	

- **Q13.** What was the flat royalty rate for this deal? (%)

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>1st QUARTILE</i>	<i>MEDIAN</i>	<i>3rd QUARTILE</i>	<i>MAX</i>	<i>MODE</i>	<i>MEAN</i>	<i>STD. DEV.</i>
Flat Royalty Rate	9	11	2.00%	5.0%	5.0%	12.5%	20.0%	5.0%	8.7%	6.6%



# Appendix C

## LESI Survey Results

- **Q14.** Please provide the royalty tier structure that most closely resembled your deal.

*Similar to the 2014 summary results, we are not providing summary statistics for the Tier data. Tier data is presented in the main body of this report.*

- **Q15.** Since this deal did NOT include royalties, was there a profit sharing component?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
1	1	50%	Yes
1	1	50%	No
<b>Total</b>	<b>2</b>	<b>100%</b>	

- **Q16.** What was the ratio of profit sharing?

*\*If there are less than 3 deals, data cannot be disclosed.*

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>MEAN</i>	<i>MAX</i>
Licensor	1	1	N/A	N/A	N/A
Licensee	1	1	N/A	N/A	N/A





# Appendix C

## LESI Survey Results

- Q17.** What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (US\$ Millions)

*A total of 10 deals entered data for at least 1 of the below components. The calculations below exclude blanks and zeroes.*

Financial Component	Companies	Deals	% of Deals with this Financial Component*	MIN	FIRST QUARTILE	MEDIAN	THIRD QUARTILE	MAX	MODE	MEAN	STD. DEV.
Payment of Up-front Fee at Signing	6	8	80%	0.020	0.2	0.6	23.1	100.0	N/A	23.0	41.1
Payment of Technology Access Fee	1	1	10%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Equity Investment(s)	No data										
Research and Development Funding	2	2	20%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Development Milestone Payments	3	4	40%	1.000	3.7	6.6	168.9	650.0	N/A	166.0	322.7
Sales Milestone Payments	3	3	30%	0.600	1.3	2.0	251.0	500.0	N/A	167.5	287.9

\*Denominator is all deals that provided information for at least one of the above financial components. If there are less than 3 deals, data cannot be disclosed.



# Appendix C

## LESI Survey Results

- **Q17.** What was the total potential value (for example: "Biobucks") of the following financial components of the deal terms? (Continued) (US\$ Millions)

Financial Component	Don't Know			Not Applicable		
	Companies	Deals	Pct Selected	Companies	Deals	Pct Selected
Payment of Up-front Fee at Signing	2	2	13%	5	5	15%
Payment of Technology Access Fee	2	2	13%	9	12	15%
Equity Investment(s)	3	3	20%	10	12	25%
Research and Development Funding	3	3	20%	8	10	25%
Development Milestone Payments	3	3	20%	7	8	25%
Sales Milestone Payments	3	3	20%	7	9	25%



# Appendix C

## LESI Survey Results

• **Q18. Which territories were included in the deal? (Check all the apply)**

*One deal could be in multiple territories so total deals does not equal the sum of the choices.*

Companies	Deals	Pct. Selected	Choice
7	10	67%	Global
0	0	0%	All of Europe
0	0	0%	EU-5
1	1	7%	EU-27
0	0	0%	Russia
0	0	0%	CIS
0	0	0%	Scandinavia
0	0	0%	Other Europe
0	0	0%	All of Asia
2	2	13%	Japan
1	1	7%	China
1	1	7%	India
1	1	7%	Korea
0	0	0%	Middle East
1	1	7%	Other Asia
0	0	0%	All of North America
0	0	0%	USA

Companies	Deals	Pct. Selected	Choice
0	0	0%	Canada
0	0	0%	Mexico
0	0	0%	Other North America
0	0	0%	All of South America
0	0	0%	Argentina
0	0	0%	Brazil
0	0	0%	Chile
0	0	0%	Other South America
0	0	0%	All of Africa
0	0	0%	Egypt
0	0	0%	South Africa
0	0	0%	Other Africa
1	1	7%	All of Pacific
0	0	0%	Australia
0	0	0%	New Zealand
0	0	0%	Philippines
0	0	0%	Other Pacific



# Appendix C

## LESI Survey Results

- **Q19.** Please indicate the estimated Total peak sales for all territories.

*One deal could be in multiple territories so total deals does not equal the sum of the choices.*

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
6	6	46%	\$0 - \$100 million
3	3	23%	\$101 - \$250 million
2	2	15%	\$251 - \$500 million
1	1	8%	\$501 - \$1,000 million
1	1	8%	\$1,000+ million
<b>Total</b>	<b>13</b>	<b>100%</b>	

1	2	13%	Don't Know
0	0	0%	Not Applicable

- **Q20.** Did this deal include shared commercialization rights for the licensor in the territory (e.g., co-promotion or co-marketing rights)?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
1	1	8%	Yes
8	11	92%	No
0	0	0%	Option to "opt-in"
<b>Total</b>	<b>12</b>	<b>100%</b>	

1	1	7%	Don't Know
2	2	13%	Not Applicable



# Appendix C

## LESI Survey Results

- **Q21.** Who has the operational responsibility for the following functions?

	Licensor			Licensee			Don't Know			Not Applicable		
	Companies	Deals	Pct Selected	Companies	Deals	Pct Selected	Companies	Deals	Pct Selected	Companies	Deals	Pct Selected
Research	6	6	50%	4	6	50%	12	100%	0	0	0%	3
Preclinical development	4	4	44%	3	5	56%	9	100%	0	0	0%	5
Clinical Development	3	3	30%	5	7	70%	10	100%	0	0	0%	5
Regulatory	2	2	14%	9	12	86%	14	100%	0	0	0%	1
Manufacturing	4	4	31%	6	9	69%	13	100%	0	0	0%	2
Commercialization	0	0	0%	10	13	100%	13	100%	0	0	0%	2

# Appendix C

## LESI Survey Results

- **Q22.** Who has financial responsibility for the following functions? (input % of cost)

	Companies	Deals	Licensor Mean	Licensee Mean	Total	Don't Know			Not Applicable		
						Companies	Deals	Pct Selected	Companies	Deals	Pct Selected
Research	4	6	46.7%	53.3%	100%	4	4	25%	6	6	38%
Preclinical development	3	5	32.0%	68.0%	100%	4	4	25%	6	7	44%
Clinical Development	4	6	18.3%	81.7%	100%	4	4	25%	6	6	38%
Regulatory	6	9	27.8%	72.2%	100%	4	4	25%	3	3	19%
Manufacturing	6	9	21.1%	78.9%	100%	4	4	25%	3	3	19%
Commercialization	6	9	2.2%	97.8%	100%	4	4	25%	3	3	19%



# Appendix C

## LESI Survey Results

• **Q23. Manufacturing supply: How is the Transfer Price for commercial supply established?**

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
5	8	80%	Licensee is responsible for commercial supply, transfer price not applicable.
1	1	10%	Licensor responsibility: Cost of manufacture
1	1	10%	Licensor responsibility: Cost of manufacture plus profit component that is a % of net sales (royalty)
0	0	0%	Licensor responsibility: Cost of manufacture plus profit component is a % of cost of manufacture,
<b>Total</b>	<b>10</b>	<b>100%</b>	
3	3	20%	Don't Know
2	2	13%	Not Applicable
1	1	N/A	Average % of cost of net sales (royalty)
0	0	N/A	Average % of cost of manufacturer



# Appendix C

## LESI Survey Results

- **Q24.** As part of deal process, did you financially model the value of the deal?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
7	7	70%	Yes
3	3	30%	No (Please explain why not)*
<b>Total</b>	<b>10</b>	<b>100%</b>	
1	2	14%	Don't Know
2	2	14%	Not Applicable

\*Fixed R&D costs, comparator deals, Comparables

- **Q25.** Please select ALL the methods used:

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
5	5	71%	Net Present Value (NPV)
6	6	86%	Risk Adjusted Net Present Value (rNPV)
2	2	29%	Internal Rate of Return (IRR)
2	2	29%	Effective Royalty Rate (EFR)
4	4	57%	Peak Revenue or Income
4	4	57%	Comparables
2	2	29%	Multiples (i.e. on sales or on projected earnings)
1	1	14%	Other (Please specify)*
<b>Total</b>	<b>7</b>	<b>NA Total</b>	
0	0	0%	Don't Know
0	0	0%	Not Applicable

\*Foro proprietary



# Appendix C

## LESI Survey Results

- **Q26.** Please select the primary method used:

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
4	4	57%	Net Present Value (NPV)
2	2	29%	Risk Adjusted Net Present Value (rNPV)
0	0	0%	Internal Rate of Return (IRR)
0	0	0%	Effective Royalty Rate (EFR)
0	0	0%	Peak Revenue or Income
0	0	0%	Comparables
0	0	0%	Multiples (i.e. on sales or on projected earnings)
1	1	14%	Other (Please specify)*
<b>Total</b>	<b>7</b>	<b>100%</b>	
0	0	0%	Don't Know
0	0	0%	Not Applicable

\*Foro proprietary



# Appendix C

## LESI Survey Results

- Q27. What was the calculated NPV or rNPV value?**

*\*Less than 3 companies so data cannot be disclosed.*

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>1st QUARTILE</i>	<i>MEDIAN</i>	<i>3rd QUARTILE</i>	<i>MAX</i>	<i>MODE</i>	<i>MEAN</i>	<i>STD. DEV.</i>
NPV or rNPV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

	<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>
Don't Know	3	3	50%
Not Applicable	2	2	33%

- Q28. What was the discount rate used?**

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>1st QUARTILE</i>	<i>MEDIAN</i>	<i>3rd QUARTILE</i>	<i>MAX</i>	<i>MODE</i>	<i>MEAN</i>	<i>STD. DEV.</i>
Discounted Rate	5	5	7	9	10	12	15	N/A	11	3

	<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>
Don't Know	1	1	14%
Not Applicable	1	1	14%



# Appendix C

## LESI Survey Results

- **Q29.** Did your analysis include an overall probability of success to marketing approval from the date of deal to commercialization?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
4	4	80%	Yes (Please enter the percent)
1	1	20%	No (Please explain)
<b>Total</b>	<b>5</b>	<b>100%</b>	
1	1	14%	Don't Know
1	1	14%	Not Applicable
2	2	53%	Probability of success

- **Q30.** Did the final deal structure reflect the valuation you established prior to negotiations?

<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>	<i>Choice</i>
4	4	67%	Yes
0	0	0%	No, it was higher
2	2	33%	No, it was lower
<b>Total</b>	<b>6</b>	<b>100%</b>	
4	5	36%	Don't Know
3	3	21%	Not Applicable



# Appendix C

## LESI Survey Results

- **Q31.** What was the actual split of deal valuation?

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>MEAN</i>	<i>MAX</i>
Licensor	3	3	30.0%	42.7%	63.0%
Licensee	3	3	37.0%	57.3%	70.0%

	<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>
Don't Know	5	7	50%
Not Applicable	4	4	29%

- **Q32.** What was your target split or deal valuation prior to negotiations?

	<i>Companies</i>	<i>Deals</i>	<i>MIN</i>	<i>MEAN</i>	<i>MAX</i>
Licensor	3	3	20.0%	36.7%	50.0%
Licensee	3	3	50.0%	63.3%	80.0%

	<i>Companies</i>	<i>Deals</i>	<i>Pct. Selected</i>
Don't Know	6	7	50%
Not Applicable	4	4	29%



# Appendix D

*Survey Questionnaire:*

*2016 LES Global BioPharmaceutical  
Royalty Rate and Deal Terms Survey*



# Appendix D

## Survey Questionnaire

### 2016 LES Global BioPharmaceutical Royalty Rates & Deal Terms Survey

*LES would like to gather details about completed licensing deals since January 2014. Please submit as many deals as you are willing to share. You may enter all the deals in one session or you may enter them individually through August 26, 2016.*

**A.** What type of organization are you? *(select one)*

Not-for-profit *(answer question A1)*

Government

Operating Company *(answer question A2)*

Other (Please specify) \_\_\_\_\_

**A1.** What type of Not-for-Profit?

Academic (incl. medical/veterinary/dental schools)

Hospital (not affiliated with medical/veterinary/dental schools)

Medical Research Institute

Foundation/NGO (not affiliated with either of the two above)

Patient Advocacy Group

Other (Please specify) \_\_\_\_\_

**A2.** What type of Operating Company?

Biotechnology

Pharmaceutical

Diagnostic (IVD manufacturer or reference laboratory)

Medical Device (other than diagnostics)

Health Information Technology / Analytics

Life sciences research tools

Drug Delivery

Other (Please specify) \_\_\_\_\_





# Appendix D

## Survey Questionnaire

**B.** In the past 12 months, how many licenses were executed by your company/organization?

- 1 – 2 licenses
- 3 – 5 licenses
- 6 – 10 licenses
- 11 – 20 licenses
- More than 20 licenses

**C.** What was your organization's annual sales revenue (in US dollars) in the business unit for this deal (e.g. pharmaceuticals, diagnostics, etc.) 2015? (select one))

- Not-for-profit or Government organization
- Pre-commercial operating company
- \$0 – \$100 million
- \$101 – \$250 million
- \$251 – \$500 million
- \$501 – \$1000 million
- \$1,000 – \$5,000 million
- \$5,000+ million



# Appendix D

## Survey Questionnaire

1. What **year** did this deal close? *(select one)*

2014  
2015  
2016

2. Was this **exclusive or non-exclusive** to the Parties? *(select one)*

Exclusive  
Non-exclusive

3. Were you the: *(select one)*

Licensor  
Licensee



# Appendix D

## Survey Questionnaire

### 4. The MAJOR reason for this deal was: *(please select one)*

DRUG PLATFORM DEAL to acquire rights to a platform potentially leading to a series of new chemical entities or biologics (inclusive of vaccines)

NEW CHEMICAL ENTITY DEAL for a product where the drug moiety had not been previously approved.

DRUG USE DEAL to acquire rights to a new use or repurpose of approved/unapproved molecule for a new indication not previously pursued by the innovator (NOTE: does not include a reformulated or drug delivery product, see below)

DRUG DELIVERY PRODUCT DEAL (SAME LABEL) for a product where the drug moiety had been previously approved and the product is a reformulated version with the same labeling as the innovator's product

DRUG DELIVERY PRODUCT DEAL (NOVEL LABEL) for a product where the drug moiety had been previously approved and the product is a reformulated version with labeling or indication different from that of the innovator's product.

DRUG DELIVERY PLATFORM DEAL to apply a formulation or delivery platform (e.g., oral controlled release, solubility enhancement, etc.) to a particular molecule or portfolio of compounds in a way that does not change the underlying drug substance (regardless of whether the drug is a previously approved drug or new chemical entity).

DRUG/DEVICE COMBINATION PRODUCT DEAL for a product incorporating a drug and medical device.

DRUG/DRUG COMBINATION PRODUCT DEAL for a product incorporating two drug actives.

MARKETED BRANDED PRODUCT DEAL to acquire commercialization rights (including co-promotion, co-marketing) to an innovator's branded, already approved product (this does not include generics or authorized generics).

IN VIVO DIAGNOSTICS DEAL to acquire the rights to an *in vivo* diagnostic product in development or marketed.

IN VITRO DIAGNOSTICS DEAL was to acquire the rights to an *in vitro* diagnostic product in development or marketed.

LIFE SCIENCES PLATFORM DEAL was to acquire the rights to a platform technology potentially leading to commercial products in diagnostics or life sciences research tools

Other (Please specify) \_\_\_\_\_

### 5. What is the expected route of the administration/delivery method in the license? *(check all that apply)*

Injectable – subcutaneous or intramuscular

Injectable - intravenous

Oral

Topical/transdermal

Nasal

Other (please specify) \_\_\_\_\_

N/A (Example: In Vivo / In Vitro Diagnostics or Life Sciences Platform)



# Appendix D

## Survey Questionnaire

**6. What is the Field of Use? (select all that apply)**

Research Purposes

Human

Veterinary

**7. What was the type of the counterpart organization? (select one)**

Not-for-Profit (answer question 7a)

Government

Operating Company (answer question 7b)

Other (Please specify) \_\_\_\_\_

**7a. What type of Not-for-Profit?**

Academic (incl. medical/veterinary/dental schools)

Hospital (not affiliated with medical/veterinary/dental schools)

Medical Research Institute

Foundation/NGO (not affiliated with either of the two above)

Patient Advocacy Group

Other (Please specify) \_\_\_\_\_

**7b. What type of Operating Company?**

Biotechnology

Pharmaceutical

Diagnostic (IVD manufacturer or reference laboratory)

Medical Device (other than diagnostics)

Health Information Technology / Analytics

Life sciences research tools

Other (Please specify) \_\_\_\_\_



# Appendix D

## Survey Questionnaire

8. What was the counterpart organization's estimated annual pharmaceutical sales revenue (in US dollars) in 2013? (select one)

- Not-for-Profit or Government organization
- Pre-commercial Operating Company
- \$0 – \$100 million
- \$101 – \$250 million
- \$251 – \$500 million
- \$501 – \$1000 million
- \$1,000 – \$5,000 million
- \$5,000+ million

9. At closing, what was the most advanced stage of development of the product for the principle indication? (*select one*)  
For Therapeutic/In vivo diagnostic (select only if In Vitro Diagnostic or Life Sciences Platform is not selected in question 4)

- Discovery
- IND Track/Pre-IND
- IND Filed
- Phase 1 (patients enrolling)
- Phase 1 (completed)
- Phase 2 (patients enrolling)
- Phase 2 (completed)
- Phase 3 (patients enrolling)
- Phase 3 (completed)
- Registered/NDA submitted
- Approved/Launched



# Appendix D

## Survey Questionnaire

For In vitro Diagnostic or life sciences tools (select only if In Vitro Diagnostic is selected in question 4)

RUO

Pre-IDE

IDE submitted

Clinical Stage In Progress

Clinical Stage Completed

Registration/510(k)/PMA (or equivalent) submitted

Approved/Launched

For Life Sciences Platform Deal (*select if only if Life Sciences Platform is selected in question 4*)

Proof-of-concept completed

Prototype

Final product in development (including manufacturing development)

Ready for commercialization

Commercialized product



# Appendix D

## *Survey Questionnaire*

**10.** [Skip this Question if answer to 4 was In vitro Diagnostic] Please choose the type or category of product that was the subject of this deal. (select one)

- Cytokine
- Hormone
- Monoclonal antibody
- Peptide/protein
- RNAi/antisense (or similar)
- Gene therapy
- Stem Cell
- Platform Technology
- Small molecule
- Natural product
- Vaccine
- Diagnostic based on a type of product other than those listed
- Device
- Other (please specify) \_\_\_\_\_



# Appendix D

## Survey Questionnaire

11. Please select the principle therapeutic (or diagnostic) area for which the product was licensed. *(select one)*

- Oncology
- Blood & Clotting
- Cardiovascular
- CNS-Neurological/Neurodegenerative
- CNS-Pain
- CNS-Psychiatric
- CNS-Other (Please specify) \_\_\_\_\_
- Dermatology
- Gastrointestinal
- Immunological
- Inflammation/musculoskeletal
- Infectious Disease-Bacterial
- Infectious Disease-Viral
- Infectious Disease-Other (Please specify) \_\_\_\_\_
- Metabolic/Endocrine
- Ophthalmology
- Respiratory
- Urological/renal
- Other (please specify) \_\_\_\_\_

12. Did this deal have flat or tiered royalties? *(select one)*

- Flat *(go to question 12a)*
- Tiered *(go to question 12a)*
- No Royalty Component *(go to 15)*



# Appendix D

## Survey Questionnaire

**12a.** Are the royalties paid on:

- Gross Sales
- Net Sales
- Units
- Other (Please specify)

**13.** What was the flat royalty rate for this deal? (%). (go to question #17): \_\_\_\_\_ %

**14.** Please provide the royalty tier structure that most closely resembled your deal.

*For each tier (up to 6) select the maximum sales to which this tier applied, and the royalty rate for that tier. Tier 1 indicates the bottom tier. Your TOP tier will NOT have maximum sales so please provide the royalty and enter INFINITY for maximum sales. (go to question #17)*

Example:

Tier 1	100	5%
Tier 2	200	10%
Tier 3	INFINITY	15%

	Max. Sales (US\$ millions)	Royalty for this Tier (%)
Tier 1	_____	_____
Tier 2	_____	_____
Tier 3	_____	_____
Tier 4	_____	_____
Tier 5	_____	_____
Tier 6	_____	_____



# Appendix D

## Survey Questionnaire

15. Since this deal did **NOT** include royalties, was there a profit sharing component?

Yes

No (*go to question #17*)

16. What was the ratio of profit sharing?

Licensor \_\_\_\_\_ %

Licensee \_\_\_\_\_ %

100%

17. What was the total value (for example “Biobucks”) of the following financial components of the deal terms? (US\$ Millions)

	<u>Total Potential Value (US\$ millions)</u>	<u>Not Applicable/ Don't Know</u>
Payment of Upfront Fee at Signing	_____	<input type="radio"/>
Payment of Technology Access Fee	_____	<input type="radio"/>
Equity Investment(s)	_____	<input type="radio"/>
Research and Development funding	_____	<input type="radio"/>
Development milestone payments	_____	<input type="radio"/>
Sales milestone payments	_____	<input type="radio"/>



# Appendix D

## Survey Questionnaire

**18. Which territories** were included in the deal? (Check all the apply - If the deal is in a region you do not need to check all of the countries in that region)

**For example:**

- If the deal is Global, you only need to select Global.
- If the deal is in All of Europe and All of Asia but is not in any other territory, you only need to select All of Europe and All of Asia.
- If the deal is only in USA, Japan, and China, you only need to select USA, Japan, and China.

*Global*

*All of Europe*

EU-5  
EU-27  
Russia  
CIS  
Scandinavia  
Other Europe

*All of Asia*

Japan  
China  
India  
Korea  
Middle East  
Other Asia

*All of North America*

USA  
Canada  
Mexico  
Other North America



# Appendix D

## Survey Questionnaire

(Continued) Which **territories** were included in the deal? (Check all the apply - If the deal is in a region you do not need to check all of

*All of South America*

Argentina  
Brazil  
Chile  
Other South America

*All of Africa*

Egypt  
South Africa  
Other Africa

*All of Pacific*

Australia  
New Zealand  
Philippines  
Other Pacific

19. Please indicate the estimated Total peak sales for all territories.

\$0-\$100 million  
\$101-\$250 million  
\$251-\$500 million  
\$501-\$1,000 million  
\$1,000+ million  
Not Applicable  
Don't Know



# Appendix D

## Survey Questionnaire

**20.** Did this deal include shared commercialization rights for the licensor in the territory (e.g., co-promotion or co-marketing rights)? *(select one)*

Yes

No

Option for licensor to "opt-in"

Not Applicable

Don't Know

**21.** Who has operational responsibility for the following functions?

Operational Responsibility  
(check as appropriate)

	Licensor	Licensee	Not Applicable	Don't Know
Research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preclinical development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clinical Development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regulatory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manufacturing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Commercialization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



# Appendix D

## Survey Questionnaire

22. Who has financial responsibility for the following functions?

Financial Responsibility  
(input % of cost)

	Licensor		Licensee		Not Applicable	Don't Know
Research	___%	+	___%	=100%	<input type="radio"/>	<input type="radio"/>
Preclinical Development	___%	+	___%	=100%	<input type="radio"/>	<input type="radio"/>
Clinical Development	___%	+	___%	=100%	<input type="radio"/>	<input type="radio"/>
Regulatory	___%	+	___%	=100%	<input type="radio"/>	<input type="radio"/>
Manufacturing	___%	+	___%	=100%	<input type="radio"/>	<input type="radio"/>
Commercialization	___%	+	___%	=100%	<input type="radio"/>	<input type="radio"/>



# Appendix D

## Survey Questionnaire

**23. Manufacturing Supply:** How is the Transfer Price for commercial supply established? *(select one)*

Licensee is responsible for commercial supply, transfer price not applicable.

Licensor responsibility: Cost of manufacture

Licensor responsibility: Cost of manufacture plus profit component that is a % of net sales (royalty):

Licensor responsibility: Cost of manufacture plus profit component is a % of cost of manufacture,

What % \_\_\_\_\_

Not Applicable

Don't Know

**24. As part of deal process, did you (or someone at your company) financially model the value of the deal?** *(select one)*

Yes

No (Please explain how the financial terms were determined without an analysis of the value of the deal) \_\_\_\_\_ *(go to question #30)*

Not Applicable *(go to question #30)*

Don't Know *(go to question #30)*

**25. Please select ALL the methods used:**

Net Present Value (NPV)

Risk Adjusted Net Present Value (rNPV)

Internal Rate of Return (IRR)

Effective Royalty Rate (EFR)

Peak Revenue or Income

Comparables

Multiples (for example on sales or on projected earnings)

Other (Please specify): \_\_\_\_\_

Not Applicable

Don't Know



# Appendix D

## Survey Questionnaire

26. Please select the primary method used:

- Net Present Value (NPV)
- Risk Adjusted Net Present Value (rNPV)
- Internal Rate of Return (IRR)
- Effective Royalty Rate (EFR)
- Peak Revenue or Income
- Comparables
- Multiples (for example on sales or on projected earnings)
- Other (Please specify): \_\_\_\_\_
- Not Applicable
- Don't Know

27. What was the calculated NPV or rNPV value: \_\_\_\_\_ (US\$ Millions)

- Not Applicable
- Don't Know

28. What was the discount rate used: \_\_\_\_\_ %

- Not Applicable
- Don't Know

29. (If Risk Adjusted Net Present Value) Did your analysis include an overall probability of success to marketing approval from the date of deal to commercialization?

- Yes (Please enter the percent) \_\_\_\_\_ %
- No (Please explain (a) whether or not you used some other probability of success and (b) if not, how your rNPV analysis differs from an NPV analysis).
- Not Applicable
- Don't Know



# Appendix D

## Survey Questionnaire

**30.** Did the final deal structure reflect the valuation you established prior to negotiations? *(select one)*

- Yes
- No, it was lower
- No, it was higher
- Not Applicable
- Don't Know

**31.** What was the actual split of deal valuation?

	Licensor		Licensee		Not Applicable	Don't Know
Actual Split	____%	+	____%	=100%	<input type="radio"/>	<input type="radio"/>

**32.** What was your target split or deal valuation prior to negotiations?

	Licensor		Licensee		Not Applicable	Don't Know
Target Split	____%	+	____%	=100%	<input type="radio"/>	<input type="radio"/>

**33.** What do you want to do next? *(select one)*

- I'd like to submit another deal/return to the homepage.
- I do not have anymore deals to submit at this time.

*LES plans to conduct this survey again in the future. What improvements or additional questions would you like to see in future iterations of this survey?*

